

Environmental Assessment (EA)

For

Construct Base Civil Engineering Complex

At

McConnell AFB

Project Number PRQE 87-5022

14 July, 2003

Responsible Agency: U.S. Air Force

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STAFF SUMMARY SHEET

Rec'd 1/21/04 POF

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	22 ARW/JA	COORD	<i>Walt, Maj, 19 Nov 03</i>	6	22 ARW/CV	SIGN	<i>Y15</i>
2	22 MSG/CCE	COORD	<i>Fountain P16 3 Dec 03</i>	7	22 ARW CCE	COORD	<i>Walt 4 Jan 04</i>
3	22 MSG/CD	COORD	<i>1 Dec 03 Lt Col 3 Dec 03</i>	8			
4	22 MSG/CC	COORD	<i>Hicks, Col, 24 Dec</i>	9			
5	22 ARW/CCE	COORD	<i>Shannon & Keene Capt 13 Jan 04</i>	10			

SURNAME OF ACTION OFFICER AND GRADE	SYMBOL	PHONE	TYPIST'S INITIALS	SUSPENSE DATE
COLE D. KNIGHT, GS-11	22 CES/CEV	6499	ck	

SUBJECT
Finding of No Significant Impact To Construct Base Civil Engineering Complex

DATE
DEC 03 2003

SUMMARY

1. The purpose of this Staff Summary Sheet is to complete the National Environmental Policy Act (NEPA) process for the proposed new Base Civil Engineering Complex, by obtaining 22 ARW/CV signature on the Finding Of No Significant Impact (FONSI) document (TAB 1).
2. NEPA requires an assessment of environmental impacts associated with significant changes in operations. CEV prepared an environmental assessment (EA) for the proposed project. The EA was prepared with inputs from Civil Engineering. The EA served to inform the public of the environmental impacts caused by the Preferred Action and Alternatives associated with the proposed project. A copy of the approved EA was submitted to the Public Affairs office for a 30-day public comment period. The public comment period was completed on 3 November 2003, with no comments received.
3. The FONSI is a condensed summary of the EA and is signed by the Vice Wing Commander following the public comment period to certify that none of the impacts analyzed in the EA were significant enough to warrant an Environmental Impact Statement.
4. RECOMMENDATION: 22 ARW/CV sign the FONSI (TAB 1).

HARRY BRIESMASTER
HARRY BRIESMASTER, Lt Col, USAF
Commander, 22 CES

1 TAB
FONSI

22 CES/CEVP *H13*
22 CES/CEV *DWR 19 Nov 03*
22 CES/CD *QC 1 Dec 03*

K 12-03-03

Handwritten signature

FM: 22 CES/CC

TO: 22 MSG/CC

HH
HRW/CC

18 Dec 03

Re: FONSI for BCE Complex MICON Project

Sir, in response to your question "Why isn't CONS facility in this plan?" Technically it is included though not specifically addressed. As background, space for the Contracting Squadron was only recently added to the BCE Complex project scope and is part of the administrative facility. It would be located on the second floor of the CE admin bldg and not a separate facility. I do not recommend that this FONSI be revised to include Contracting, since it was not specifically mentioned in the Environmental Assessment when it was out for public review. By not specifically mentioning Contracting in the EA/FONSI does not mean that it can't be part of the project. Since an EA/FONSI is usually done 1-2 years before project design starts, it is not unusual to have minor changes in a project.

However, if it is felt that Contracting must be specifically included in the FONSI, a revised EA will need to be sent out for public review again, delaying the completion of the FONSI until sometime in March '04.

This document is just for the environmental portion of the project. The MILCON project itself does include space and cost for CONS.

Buddy Briesmaster
Buddy Briesmaster

TAB 1

FINDING OF NO SIGNIFICANT IMPACT FOR PROPOSED BASE CIVIL ENGINEERING COMPLEX AT MCCONNELL AFB, KANSAS

Agency: United States Air Force (USAF), Headquarters, Air Mobility Command

1.0 BACKGROUND

Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 U.S. C 4321, *et seq.*, the President's Council on Environmental Quality (CEQ) regulations, 40 CFR 1500-1508, and Air Force Instruction (AFI) 32-7061, *The Environmental Impact Analysis Process*, as promulgated at 32 CFR Part 989, the U.S. Air Force performed an assessment of the potential environmental consequences resulting from the proposed construction of a base civil engineering (BCE) complex at McConnell AFB, Kansas. The environmental assessment (EA) considers all potential impacts of the Preferred Action and the alternatives, both as solitary actions and in conjunction with other activities.

This finding of no significant impact (FONSI) summarizes the results of the evaluation of the proposed project. The discussion focuses on activities that have the potential to change both the natural and human environments. This document summarizes the options considered and states why the proposed project was designed and sited as proposed.

2.0 PREFERRED ACTION

The proposed project (Preferred Action) is to construct a BCE complex in the area located north of the existing BCE. The new BCE complex would consist of new facilities for the administration, covered storage, and equipment maintenance and readiness shops. New facilities would be constructed with concrete foundations and floor, brick veneer walls and sloped roofs. The proposed project would include a new equipment yard, parking for 60 government vehicles, landscaping, irrigation, and demolition of 56,515 square feet (SF) of existing facilities. Physical security, DoD minimum construction standards, and an air conditioning unit (100 tons), will be included in the BCE complex design.

The Preferred Action Alternative would be to construct the new BCE complex. The location of the proposed action (and the alternative action) would be at McConnell AFB (MAFB), on the grass lot (currently occupied by a softball field) north of existing BCE facilities, between Kansas Street and Hutchinson Street. In an effort to reduce dislocations of current functions during construction activities, the existing softball field would be demolished to permit construction of the proposed new BCE complex. The new BCE complex would require approximately 8-acres and would be paved.

The selected construction site would have a prominent presence and would be the first complex visible past the Visitor's Center. The proposed BCE complex would consist of

two, multi-story, L-shaped buildings (east and west) separated by a paved government owned vehicles (GOV) parking lot. The East Building would house Administration, Readiness, and most of the shops, and would be set parallel to Kansas Street and then west to create the southeast corner of the proposed new complex. With pitched standing seam metal roofs and overhangs shading office and corridor glazing, the East Building would present an office-like appearance to anyone entering the base. "Front door" access to the entire complex would be from Pittsburg Street to the south, in order not to introduce a new intersection in the first stretch of Kansas Street.

The West Building would house Logistics Management, Self-Help, and more noise-producing shops (Heavy Equipment and Power Production), and would create the northwest corner of the proposed new BCE complex along Hutchinson Street. A large equipment and service yard would separate the East and West Buildings. Loop access to the large equipment and service yard would be provided utilizing two entries/exits from Hutchinson Street. At the southwest corner of the complex, the existing buildings for Readiness (Building 683) and EOD (Building 684) would be retained and converted to expanded EOD use. A decorative wall would be used to enclose the remainder of the proposed BCE complex.

Within the equipment yard separating the East and West Buildings, there would be approximately sixty dedicated spaces (75 square meters each) for large equipment vehicles. Types of vehicles would include graders, pay loaders, cranes, dump trucks, trailer mounted generators and bulk liquid storage tanks, trucks, and other equipment. South of the proposed new complex, much of the existing yard area would be converted into administration area parking (approximately 180 spaces). New parking would also be created for logistics and shop parking.

Vehicular and equipment access to the yard of the complex comes from the west off Hutchinson Street between existing Building 680 and 683 (southwest corner of the yard). Loop access would be permitted by exiting through the north perimeter of the yard just east of the Logistics warehouse (northwest corner of the complex). This would connect to new drives/streets between the complex and the new proposed waste storage tank either back to Hutchinson or straight north all the way to Salina Street.

Within the equipment yard, the west "zone" is for maneuvering in and out of Logistics, Heavy Repair, and Power Production. The east "zone" is dedicated to maneuvering and support spaces for the various shops in the East Building. The center "zone" is dedicated to vehicle and equipment storage, both covered and uncovered. All 150 GOV could be accommodated within the yard. However, many of the pick-ups, small vans, and panel trucks can be parked and locked in the parking lots outside the yard's perimeter fence to allow maximum flexibility for secure storage of the large pieces of equipment within the yard.

Logistics, Heavy Repair, and Power Production would have the opportunity for pull-through access from Hutchinson Street into the yard. In addition, the West Building is

set back significantly from Hutchinson to create a large temporary holding/parking space for trucks, tractor-trailers, and large equipment off-street.

The proposed project calls for relocating Entomology from a building located much further south into Buildings 937 and 938, which currently houses Power Production. Building 948 which currently houses the Engineering and Environmental Flights, will not be demolished, but left available for future temporary uses. Building 688 (Logistics warehouse) and Building 689 (equipment shed) will be demolished for the new south parking lot. Buildings 687/697 (Logistics) and 699 (exterior electric shop) would be demolished to construct the parking required for use by Readiness Operations. Other buildings that would eventually be demolished as a result of the proposed project would include: 685, 686, 690, 691, 692, 693, 695, 696, 701, and 708.

Buildings constructed during the proposed project would have exterior walls consisting of face brick in three colors per the base guidelines and matching the existing color patterns. The brick would be backed by 200 to 300-mm of reinforced concrete masonry unit depending on the height of the wall. The reinforced masonry walls would also serve as bearing walls for the roof structure. Structural steel lintels would support roof overhangs and canopies. The building foundations would consist of continuous reinforced concrete grade beams, placed below frost depth, and would support exterior walls. Reinforced concrete spread footings would support columns. Interior bearing walls would be supported on continuous strip footings. The building floors would consist of a minimum 100-mm thick concrete slabs over a vapor barrier, gravel fill, and 500-mm of select fill material. Concrete floor slabs would be thickened and appropriately reinforced at areas of increased loading such as warehouse space, vehicular traffic, and heavy equipment repair. The building roofing would be metal, standing seam, similar to other new facilities such as the adjacent transportation complex. Roof drainage would be gutters and downspouts. All metal roofing and flashing would be dark brown pre-finished metal to match the base guidelines and the existing buildings. The roof structure would be metal deck supported by sloped steel bar joist and structural steel framing. The interior wall partitions would be both concrete masonry units and metal stud with gypsum wallboard finished construction, depending on durability requirements of the adjacent spaces. The site building would be fully protected by hydraulically calculated wet-pipe sprinkler system designed in accordance with Military Handbook 1008C and in accordance with requirement of the McConnell Air Force Base Fire Department. The sprinkler system would be zoned, and Class I stand pipes would be installed. Smoke detectors would be provided in the supply and return duct systems of all air handler units, which will shut down their respective air handler if smoke is detected.

Various site utility improvements would be required, including extending lines to the site and taking storm drainage underneath Kansas Street. Primary fuel for the site buildings would be natural gas for heating. No backup fuel source would be provided. Electricity would be the primary cooling energy source. A backup generator would be included in the project. The site buildings would be connected to the sanitary sewer main along Hutchinson Street. A new storm drainage culvert under Kansas Street would route much of the collected drainage to existing surface collection areas. All underground ferrous

pipng materials would be cathodically protected with sacrificial anodes. In summary, the proposed project would afford McConnell the following opportunities:

1. Improve the appearance of the BCE Complex both from the main Kansas Street entrance to the base and from other vantage points.
2. Consolidate all major BCE functions.
3. Provide a large contiguous equipment and service yard.
4. Demolish up to eighteen existing buildings currently housing the programs for the proposed new BCE complex.
5. Provide GOV parking of 150 GOV and 200 POV vehicles.

3.0 ALTERNATIVES

The alternatives considered were the Preferred Action, Building Renovation, and No Action alternatives.

Preferred Action: See Section 2.0.

Building Renovation: The Building Renovation Alternative was considered as part of the EA; however, economic analysis determined that building renovation was not an economically viable alternative. Consequently, the Building Renovation Alternative was dropped from further consideration.

No Action Alternative: Under the No Action Alternative, BCE would continue to use the existing facilities. Span of control and unit operational efficiency would continue to suffer and BCE would continue to have problems performing its mission in the event of another base emergency. The overall base mission would suffer and the health and safety of base personnel would be compromised during another emergency situation.

Continued operations in the existing BCE facilities will continue to require extensive maintenance and repair due to the age and condition of the facilities. The average annual maintenance will continue to increase as the facilities continue to age. Annual utility costs will be higher than in other alternatives because energy conservation renovations are not available in this alternative.

Wood constructed facilities require paint and roof repair every five years. Heating and air conditioning units are scheduled for replacement in each facility in the next 25 years. In addition, carpet will require replacement every five years. Furnishings would be replaced every 10 years. This replacement would include office furniture, computer equipment, and a Computer Aided Design Drafting (CADD) system.

4.0 SUMMARY OF FINDINGS

This environmental assessment evaluated the impact of the proposed project to the environment. Issues eliminated from detailed study included air quality, transportation and related noise, airspace/airfield operations, water resources (groundwater, surface water, and wetlands), biological resources, cultural resources, environmental

management, environmental justice, economic, and social impact, and unavoidable adverse impacts. These issues were eliminated from detailed study because preliminary analysis indicated that the proposed project would have no impact in these areas.

The Environmental Assessment (EA) performed for the proposed project evaluated the potential impacts to 1) air quality, 2) noise, 3) wastes, hazardous materials, and stored fuels, 4) water resources, 5) biological resources, 6) socioeconomic, 7) cultural resources, 8) land use, 9) transportation, 10) airspace/airfield operations, 11) safety and occupational health, 12) environmental management (pollution prevention, geology, and soils), 13) environmental justice, 14) indirect and cumulative impacts, 15) unavoidable adverse impacts, 16) relationship between short-term uses and enhancement of long-term productivity, and 18) irreversible and irretrievable commitment of resources, that may result from the Preferred Action, and Building Renovation, and No Action Alternatives. A summary of findings is presented below:

4.1 WASTE, HAZARDOUS MATERIALS, AND STORED FUELS

Preferred Action Alternative:

Non-Hazardous Waste: If the Preferred Action Alternative were implemented, non-hazardous materials (construction and demolition debris) would be generated by the project. It is estimated that the project would result in approximately 237 tons of non-hazardous waste resulting mostly from demolition activities (metal, concrete, miscellaneous debris, and asphalt and concrete pavement). However, it is also assumed that the project contractor would be responsible for disposing of all non-hazardous waste that would be generated if the Preferred Action Alternative were implemented. Consequently the tonnage of non-hazardous waste generated by the project would not be included in the annual amount of non-hazardous waste generated by MAFB.

If the Preferred Action Alternative were implemented, the annual amount of non-hazardous waste generated by the base could be reduced by a reduction in loss of building materials due to lack of adequate storage space.

Hazardous Waste: Implementation of the Preferred Action Alternative could result in a minor increase in the production of hazardous waste. Any short-term increase in waste would be temporary, and McConnell's 90-day storage facility and disposal contractor would be able to easily accommodate the temporary increase in both types of waste. McConnell AFB's aggressive application of hazardous material reduction, reuse, and recycling should result in no significant difficulties dealing with any additional hazardous waste that may be generated during demolition activities. In addition, if the Preferred Action Alternative were implemented, no increase in the number of satellite accumulation points (SAPs) is expected.

Special Waste: Review of the Environmental Flight files indicate that several of the buildings that would be demolished if the Preferred Action were implemented may contain asbestos containing materials (ACM). MAFB currently generates approximately 5 tons of special waste annually. Identified ACM would have to be removed prior to

demolition and disposed of as a special waste at an approved disposal facility. Implementation of the Preferred Action Alternative would most likely result in a short-term increase in special waste.

Hazardous Materials: Under the Preferred Action Alternative, no change in the amount of hazardous materials handled by the 22 CES in the performance of its mission is expected.

Stored Fuels: Under the No Action Alternative, there would be no impact on hazardous materials used by the 22 CES.

No Action Alternative: No change in hazardous or solid waste generation or stored fuels would be realized from selection of this alternative.

4.2 WATER RESOURCES

Preferred Action Alternative: Flooding analysis indicates that construction of the proposed project would increase surface water runoff at Outfall 022. However, the estimated increase in surface water runoff is not expected to add any additional burden to the effectiveness of current floodwater controls already in place. The proposed project would increase the acres of paved impervious surface from 8-acres to approximately 16-acres.

Best Management Practices (BMP) would be applied during the project to control surface water runoff to minimize the environmental impact to McConnell Creek. BMP may include installation of a silt fence around the perimeter of the construction site, hay bales to control surface water flow around culverts, covering equipment and construction materials, reseeding the site after construction activities are complete, and other site engineering practices.

No Action Alternative: There would be no impact on MAFB water resources.

4.3 BIOLOGICAL RESOURCES

Preferred Action Alternative: Implementation of the Preferred Action Alternative would have minimal impact on MAFB biological resources.

No Action Alternative: There would be no impact on MAFB biological resources.

4.4 SOCIOECONOMIC

Preferred Action Alternative: Implementation of the Preferred Action Alternative would cost approximately \$25.5 million to implement. Sales of equipment, employment opportunity, and secondary retail purchase on the local community will add to the annual \$350 to \$400 million contribution McConnell currently makes to Wichita and Derby. Therefore, implementation of the Preferred Action Alternative would provide a short-term beneficial impact to local contractors and retailers.

The Preferred Action Alternative would have a long-term socioeconomic benefit by eliminating the need to spend scarce maintenance dollars on an aging building, removing

site personnel from a potentially unhealthy work environment, and improving morale of personnel assigned to the building. The project would have the added benefit of eliminating increasing span-of-control to better enable the 22 CES to better meet its mission requirements.

No Action Alternative: Under the No Action Alternative, there would be a negative socioeconomic impact. BCE would continue to use the existing facilities. Span of control and unit operational efficiency would continue to suffer and BCE would continue to have problems performing its mission in the event of another base emergency. The overall base mission would suffer and the health and safety of base personnel would be compromised during another emergency situation.

Continued operations in the existing BCE facilities will continue to require extensive maintenance and repair due to the age and condition of the facilities. The average annual maintenance will continue to increase as the facilities continue to age. Annual utility cost will be higher than in other alternatives because energy conservation renovations are not available in this alternative.

Wood constructed facilities require paint and roof repair every five years. Heating and air conditioning units are scheduled for replacement in each facility in the next 25 years. In addition, carpet will require replacement every five years. Furnishings would be replaced every 10 years. This replacement would include office furniture, computer equipment, and a Computer Aided Design Drafting (CADD) system.

4.5 LAND USE

Preferred Action Alternative: The Preferred Action Alternative would require approximately 8 acres of undeveloped land located north of existing BCE buildings.

No Action Alternative: Under the No Action Alternative, no impact to land use will be realized.

4.6 SAFETY AND OCCUPATION HEALTH

Preferred Action Alternative: The Preferred Action Alternative would improve safety and occupation health of site personnel by enabling the BCE to better perform its mission by improving command and control between the many different functions. In the event of another disaster like that suffered on 26 April 1991, when a tornado struck the base, BCE response would be better prepared to respond thereby improving safety and possibly saving lives of personnel at MAFB. The proposed BCE complex would significantly decrease communication and response delays and enable Damage Assessment Teams (DAT) to remain assembled in one location. In addition, the proposed new facilities would be large enough to allow storage of all materials requiring protection from the weather. Inadequate material control facilities would result in unacceptable losses of construction materials and supplies due to weather damage and reduce resource protection.

No Action Alternative: Under the No Action Alternative there would be short-term and long-term impacts to safety and occupational health. Span of control problems during an emergency could increase emergency response times and a corresponding loss of life and lack of adequate material storage space and equipment storage space would continue to impact worker safety.

4.7 INDIRECT AND CUMULATIVE IMPACTS

Preferred Action Alternative: There would be minor indirect and cumulative impacts associated with the Preferred Action Alternative that would be confined to MAFB property. Negative impacts are expected to be minor and would be more that offset by short-term and long-term positive impacts.

No Action Alternative: Under the No Action Alternative, there would be both short-term and long-term negative impacts on “Indirect and Cumulative Impacts.”

4.8 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Preferred Action Alternative: Implementation of the Preferred Action Alternative would have a positive effect on long-term productivity by consolidating all major BCE functions, providing a large contiguous equipment and service yard, demolishing up to eighteen existing buildings, providing GOV parking of 150 vehicles and 200 POV, and providing adequate covered material storage space.

No Action Alternative: Under the No Action Alternative there would be both short-term and long-term negative impacts. The 22 CES would continue to experience span of control between the major BCE functions, inadequate material storage space would continue to result of loss of construction materials, and the base would continue to have to commit scarce resources to maintain buildings that have exceeded their design life.


4.9 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Preferred Action Alternative: Implementation of the Preferred Action Alternative would result in the loss of \$19.6 million and 8 acres of undeveloped land.

No Action Alternative: Under the No Action Alternative there would be no irreversible and irretrievable commitment of resources.

FINDING OF NO SIGNIFICANT IMPACT: Based on the environmental assessment conducted in accordance with the requirements of NEPA, CEQ regulations and AFI 32-7061, I conclude the Preferred Alternative, "Construct Base Civil Engineering Complex" at McConnell AFB, will have no significant individual or cumulative impact upon the environment. An environmental impact statement is not warranted and one will not be prepared. The Wichita Eagle published a notice of availability on 5 October 2003. The public comment period ended on 3 November 2003. The signing of this Finding of No Significant Impact (FONSI) completes the environmental impact analysis under Air Force regulations.

APPROVED:



DAVID J. KRAMER, Colonel, USAF
Vice Commander, 22d Air Refueling Wing (AMC)

15 JAN 2004
DATE

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None	None	None

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ACCRONYMS, ABBREVIATIONS, AND TERMS

ACM	Asbestos Containing Materials
AEF	Aerospace Expeditionary Force
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AFRC	Air Force Reserve Command
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
ARG	Air Refueling Group
ARS	Air Refueling Squadron
ARW	Air Refueling Wing
BASH	Bird Aircraft Strike Hazard
BCE	Base Civil Engineer
BMP	Best Management Practices
CE	Civil Engineering
CEQ	Council on Environmental Quality
CES	Civil Engineer Squadron
CDC	Child Development Center
DAT	Damage Assessment Team
DCE	Dichloroethylene
DNL	Day/Night Average A-Weighted Sound Level
DOD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FONSI	Finding Of No Significant Impact
FTAC	First Term Airmen's Center
HAP	Hazardous Air Pollutant

HQ	Headquarters
HVAC	Heating, Ventilation, and Air Conditioning
KDHE	Kansas Department of Health & Environment
Kg	Kilogram
LAN	Local Area Network
LFM	Linear Feet Per Minute
MAFB	McConnell Air Force Base
MFH	Military Family Housing
MSF	Mission Support Flight
MW	Monitoring Well
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPV	Net Present Value
NOV	Notice of Violation
PGL	Program Guidance Letter
PM	Particulate Matter
PPE	Personal Protection Equipment
POTW	Publicly Owned Treatment Works
EQD	Explosive Quantity Distance Siting and Safety Clearance Criteria
RCRA	Resource Conservation and Recovery Act
SAF/MIQ	Deputy Assistant Secretary of the Air Force
TSI	Thermal System Insulation
SAP	Satellite Accumulation Point
sf	Square Feet
SF	Security Force
SFS	Security Forces Squadron
SHPO	State Historic Preservation Office
TCE	Trichloroethylene
ug/l	Micrograms Per Liter
USDA	United States Department of Agriculture
UTC	Unit Type Code

VOC	Volatile Organic Compound
WSA	Weapons Storage Area

EXECUTIVE SUMMARY

Pursuant to the National Environmental Policy ACT (NEPA) of 1969, 42 U.S.C. 4321, et seq., the President's Council on Environmental Quality (CEQ) regulations, 40 CFR 1500-1508, and Air Force Instruction (AFI) 32-7061, *The Environmental Impact Analysis Process*, as promulgated as 32 CFR Part 989, the U.S. Air Force performed an assessment of the potential environmental consequences from the construction of a base civil engineering complex (BCE) located at McConnell AFB (MAFB), Kansas. For the purpose of this report, the term "site" shall refer to the BCE property.

The proposed project (Preferred Action) is to construct a new base civil engineer complex in the area located north of the existing civil engineer complex. The new BCE complex would consist of new facilities for the base BCE administration, covered storage, and equipment maintenance and readiness shops. New facilities would be constructed with concrete foundations and floor, brick veneer walls and sloped roofs. The proposed project would include a new equipment yard, parking for 60 government vehicles, landscaping, irrigation, and demolition of 56,515 square feet (SF) of existing facilities. Physical security, DoD minimum construction standards, and an air conditioning unit (100 tons), will be included in the BCE complex design.

The environmental assessment (EA) considers all potential impacts of the Preferred Action and the alternatives, both as solitary actions and in conjunction with other activities. This EA considered three alternatives: 1) Preferred Action (Construct Proposed BCE Complex), 2) Building Renovation Alternative and, 3) No Action Alternative.

The Preferred Action Alternative would be to construct the new BCE complex. The location of the proposed action (and the alternative action) would be at McConnell AFB, on the grass lot (currently occupied by a softball field) north of existing BCE facilities, between Kansas Street and Hutchinson Street. In an effort to reduce dislocations of current functions during construction activities, the existing softball field would be

demolished to permit construction of the proposed new BCE complex. The new BCE complex would require approximately 8-acres and would be paved.

The selected construction site would have a prominent presence and would be the first complex visible past the Visitor's Center. The proposed BCE complex would consist of two, multi-story, L-shaped buildings (east and west) separated by a paved government owned vehicles (GOV) parking lot. The East Building would house Administration, Readiness, and most of the shops, and would be set parallel to Kansas Street and then west to create the southeast corner of the proposed new complex. With pitched standing seam metal roofs and overhangs shading office and corridor glazing, the East Building would present an office-like appearance to anyone entering the base. "Front door" access to the entire complex would be from Pittsburg Street to the south, in order not to introduce a new intersection in the first stretch of Kansas Street.

The West Building would house Logistics Management, Self-Help, and more noise-producing shops (Heavy Equipment and Power Production), and would create the northwest corner of the proposed new BCE complex along Hutchinson Street. A large equipment and service yard would separate the East and West Buildings. Loop access to the large equipment and service yard would be provided utilizing two entries/exits from Hutchinson Street. At the southwest corner of the complex, the existing buildings for Readiness (Building 683) and EOD (Building 684) would be retained and converted to expanded EOD use. A decorative wall would be used to enclose the remainder of the proposed BCE complex.

Within the equipment yard separating the East and West Buildings, there would be approximately sixty dedicated spaces (75 square meters each) for large equipment vehicles. Types of vehicles would include graders, pay loaders, cranes, dump trucks, trailer mounted generators and bulk liquid storage tanks, trucks, and other equipment. South of the proposed new complex, much of the existing yard area would be converted into administration area parking (approximately 180 spaces). New parking would also be created for logistics and shop parking.

Vehicular and equipment access to the yard of the complex comes from the west off Hutchinson Street between existing Building 680 and 683 (southwest corner of the yard). Loop access would be permitted by exiting through the north perimeter of the yard just east of the Logistics warehouse (northwest corner of the complex). This would connect to new drives/streets between the complex and the new proposed waste storage tank either back to Hutchinson or straight north all the way to Salina Street.

Within the equipment yard, the west “zone” is for maneuvering in and out of Logistics, Heavy Repair, and Power Production. The east “zone” is dedicated to maneuvering and support spaces for the various shops in the East Building. The center “zone” is dedicated to vehicle and equipment storage, both covered and uncovered. All 150 GOV could be accommodated within the yard. However, many of the pick-ups, small vans, and panel trucks can be parked and locked in the parking lots outside the yard’s perimeter fence to allow maximum flexibility for secure storage of the large pieces of equipment within the yard.

Logistics, Heavy Repair, and Power Production would have the opportunity for pull-through access from Hutchinson Street into the yard. In addition, the West Building is set back significantly from Hutchinson to create a large temporary holding/parking space for trucks, tractor-trailers, and large equipment off-street.

The proposed project call for relocating Entomology from a building located much further south into Buildings 937 and 938, which currently houses Power Production. Building 948 which currently houses the Engineering and Environmental Flights, will not be demolished, but left available for future temporary uses. Building 688 (Logistics warehouse) and Building 689 (equipment shed) will be demolished for the new south parking lot. Buildings 687/697 (Logistics) and 699 (exterior electric shop) would be demolished to construct the parking required for use by Readiness Operations. Other buildings that would eventually be demolished as a result of the proposed project would include: 685, 686, 690, 691, 692, 693, 695, 696, 701, and 708.

Buildings constructed during the proposed project would have exterior walls consisting of face brick in three colors per the base guidelines and matching the existing color patterns. The brick would be backed by 200 to 300-mm of reinforced concrete masonry unit depending on the height of the wall. The reinforced masonry walls would also serve as bearing walls for the roof structure. Structural steel lintels would support roof overhangs and canopies. The building foundations would consist of continuous reinforced concrete grade beams, placed below frost depth, and would support exterior walls. Reinforced concrete spread footings would support columns. Interior bearing walls would be supported on continuous strip footings. The building floors would consist of a minimum 100-mm thick concrete slabs over a vapor barrier, gravel fill, and 500-mm of select fill material. Concrete floor slabs would be thickened and appropriately reinforced at areas of increased loading such as warehouse space, vehicular traffic, and heavy equipment repair. The building roofing would be metal, standing seam, similar to other new facilities such as the adjacent transportation complex. Roof drainage would be gutters and downspouts. All metal roofing and flashing would be dark brown pre-finished metal to match the base guidelines and the existing buildings. The roof structure would be metal deck supported by sloped steel bar joist and structural steel framing. The interior wall partitions would be both concrete masonry units and metal stud with gypsum wallboard finished construction, depending on durability requirements of the adjacent spaces. The site building would be fully protected by hydraulically calculated wet-pipe sprinkler system designed in accordance with Military Handbook 1008C and in accordance with requirement of the McConnell Air Force Base Fire Department. The sprinkler system would be zoned, and Class I stand pipes would be installed. Smoke detectors would be provided in the supply and return duct systems of all air handler units, which will shut down their respective air handler if smoke is detected.

Various site utility improvements would be required, including extending lines to the site and taking storm drainage underneath Kansas Street. Primary fuel for the site buildings would be natural gas for heating. No backup fuel source would be provided. Electricity would be the primary cooling energy source. A backup generator would be included in

the project. The site buildings would be connected to the sanitary sewer main along Hutchinson Street. A new storm drainage culvert under Kansas Street would route much of the collected drainage to existing surface collection areas. All underground ferrous piping materials would be cathodically protected with sacrificial anodes. In summary, the proposed project would afford McConnell the following opportunities:

1. Improve the appearance of the BCE Complex both from the main Kansas Street entrance to the base and from other vantage points.
2. Consolidate all major BCE functions.
3. Provide a large contiguous equipment and service yard.
4. Demolish up to eighteen existing buildings^S currently housing the programs for the proposed new BCE complex.
5. Provide GOV parking of 150 GOV and 200 POV vehicles.

Under the No Action Alternative, BCE would continue to use the existing facilities. Span of control and unit operational efficiency would continue to suffer and BCE would continue to have problems performing its mission in the event of another base emergency. The overall base mission would suffer and the health and safety of base personnel would be compromised during another emergency situation.

Continued operations in the existing BCE facilities will continue to require extensive maintenance and repair due to the age and condition of the facilities. The average annual maintenance will continue to increase as the facilities continue to age. Annual utility cost will be higher than in other alternatives because energy conservation renovations are not available in this alternative.

Wood constructed facilities require paint and roof repair every five years. The exception is year 2001 where 12,500 SF of roofing was replaced. Heating and air conditioning units are scheduled for replacement in each facility in the next 25 years. In addition, carpet will require replacement every five years. Furnishings would be replaced every 10 years. This replacement would include office furniture, computer equipment, and a Computer Aided Design Drafting (CADD) system.

The Environmental Assessment (EA) performed for the proposed project evaluated the potential impacts to 1) air quality, 2) noise, 3) wastes, hazardous materials, and stored fuels, 4) water resources, 5) biological resources, 6) socioeconomic, 7) cultural resources, 8) land use, 9) transportation, 10) airspace/airfield operations, 11) safety and occupational health, 12) environmental management (pollution prevention, geology, and soils), 13) environmental justice, 14) indirect and cumulative impacts, 15) unavoidable adverse impacts, 16) relationship between short-term uses and enhancement of long-term productivity, and 18) irreversible and irretrievable commitment of resources, that may results from the Preferred Action, and Building Renovation, and No Action Alternatives.

Results of the EA analysis indicated that implementation of the Preferred Action Alternative would have minimal impact on the environment.

SECTION 1.0: PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

This Environmental Assessment (EA) examines the potential for impacts to the environment that would result from the proposed action and alternatives at McConnell Air Force Base (MAFB), Kansas. For the purpose of this report, the term “site” shall refer to the proposed action.

1.2 Need For The Action

The mission of the BCE squadron is to construct, operate, and maintain base facilities, provide emergency services, and enhance the environment on base. The mission is accomplished by utilizing facilities located throughout the base.

The Civil Engineer Squadron (CES) is dispersed among 25 separate facilities, many of which are functionally inadequate, far beyond their design life, and in very poor condition. Nine of the CES buildings were constructed in the early 1950's. Two of these, of wood frame construction and design life of 10-25 years, house the BCE Command and Operations administration flights and the Engineering and Environmental Flights. Two other buildings, of temporary metal building construction, house the Resources Flight and exterior electrical shop functions. Six of the remaining buildings were constructed in the mid-1960's, and most of the remaining building in the 1980's. Most of the remaining major BCE functions are housed in five buildings constructed in the mid-1960's.

Existing facilities lack sufficient functional space, covered storage, and heavy equipment parking. Approximately 50% of existing storage is at the mezzanine level, and restricting heavy loads and accessibility. Materials and equipment must be stored exposed to the elements reducing life, increasing cost for additional deliveries and replacement, and causes delay of material orders.

The current situation adversely impacts the BCE mission because of command and control problems created by having the different functions located in so many separate facilities. In the event of another disaster like that suffered on 26 April 1991, when a tornado struck the base, BCE response would be limited, endangering the safety and lives of personnel at MAFB. The separation of BCE functions caused communication and response delays during the aftermath of the 1991 tornado. Lack of space prevented Damage Assessment Teams (DAT) from remaining assembled in one location. When a team was needed, delays were encountered while members were located, assembled and deployed. Had the tornado struck existing BCE facilities, these facilities would have been destroyed, rendering BCE response non-existent during the first critical hours. Furthermore, existing facilities are not large enough to allow storage of all materials requiring protection from the weather. Inadequate material control facilities would result in unacceptable losses of construction materials and supplies due to weather damage and reduce resource protection.

1.3 Objectives For The Action

The objective of the Preferred Action would be to consolidate BCE functions that are currently dispersed among separate facilities into one complex for enhanced span of control of operations and flow of administrative matters. The new complex would provide BCE with a modern, state-of-the-art, adequately sized facility that would enable BCE to better fulfill its base mission. The proposed new complex would have the added benefit of reducing overhead, operating, and maintenance cost.

The major functional areas that would be consolidated in the proposed new BCE complex would include: squadron administration, maintenance shops and warehouse, remote facilities and associated support areas. The BCE complex would include an equipment yard, parking for 350 vehicles, landscaping, and irrigation. The project would meet guidelines in Air Force Handbook 32-1084 "Facility Requirements" and in Air Mobility Command (AMC) "Civil Engineer Squadron Design Code." Facility design would comply with the Architectural Compatibility Guide for MAFB.

1.4 Scope of EA

This EA identifies, describes, and evaluates the potential environmental impacts associated with the proposed project. The EA evaluates the impact of the project on air quality, noise, cultural resources, hazardous materials, solid waste, water resources, biological resources, land use, socioeconomic, safety and occupational health, and geological resources.

1.4.1 Issues Eliminated From Detailed Study

The following issues were considered as required by NEPA. However, based on analyses of the preferred action or the alternative actions, impacts are not anticipated. Therefore, the following issues were eliminated from further consideration.

1.4.1.1 Air Quality

The Preferred Action and alternatives would occur in Air Quality Control Region (AQCR) #99, which has been designated as in attainment for all criteria pollutants. Due to the fact that AQCR #99 is in attainment, a conformity determination is not required in this case. Construction equipment air and dust emissions calculations were performed to determine if the proposed project would have a significant impact on MAFB air quality (see Appendix F). Results of the air emission and dust calculations indicated that the proposed project would have a minor short termed impact (construction equipment emissions and dust) and no long termed impact on MAFB air emissions.

1.4.1.2 Transportation and Related Noise Transportation

The Preferred Action and alternatives would not increase the number of aircraft flights at McConnell. If the Preferred Action were selected, surface (ground) transportation through the base would increase by an estimated 150 to 200 vehicles per day; however, according to the base traffic engineer an estimated 13,000 vehicles enter and exit McConnell AFB each day. Consequently an increase of 150 to 200 vehicles per day in base traffic is expected to have an insignificant impact on traffic flow.

Noise

For purposes of this analysis, noise is defined as undesirable sound, which interferes with speech, communication, and hearing, or is otherwise annoying (unwanted sound). Under certain conditions, noise may cause hearing loss, interference with human activities at home and work, and may affect people's health and well being in various ways. Community noise levels usually change continuously during daily, weekly, and yearly patterns. The day-night average sound level (DNL) developed to evaluate the total daily community noise environment applies here. In June 1980, the Federal Interagency Committee on Urban Noise published guidelines relating DNL values to compatible land uses. This committee was composed of representatives from U.S. Departments of Defense, Transportation, and Housing and Urban Development along with the EPA and the Veterans Administration. Since their issuance, Federal agencies have generally adopted these guidelines for noise analysis. They have identified 65 DNL as a criterion that protects those receptors most affected by noise, and because it may be achieved on a practical basis. Air Force activities, which have the highest potential source of noise impacts, are the airfield operations.

Heavy equipment (graders, pay loaders, backhoes, trucks, etc.) may temporarily increase noise levels to 80 DNL during peak construction activities. The project is expected to last approximately 24 months. The nearest residential housing is located approximately 0.5 miles east of the work site and the nearest office buildings are located approximately 50-75 yards west and south of the site. Because of the distance of base housing and office buildings from the site, noise from project activities should have minimal impact on the overall noise level at the base.

1.4.1.3 Airspace/Airfield Operations

The Preferred Action and alternatives would be located approximately 0.5 miles east of the airfield. Construction of the new BCE complex would not intrude into MAFB airspace or impede airfield operations.

1.4.1.4 Cultural Resources

According to a Cultural Resource Reconnaissance Survey conducted by the U.S. Department of the Interior, National Park Service in 1995, McConnell AFB and the surrounding area of Sedgwick County does not contain potentially significant archaeological remains and the site building is not of historical significance (Appendix C). However, if subsurface features are uncovered during the project, the Base Historic Preservation Officer, the State Historic Preservation Office, and other appropriate authorities would be notified immediately and action would be taken in accordance with procedures of the Advisory Council on Historic Preservation. A copy of the complete Cultural Resources Reconnaissance Survey is available at the Environmental Flight for review upon request.

1.4.1.5 Environmental Management (Pollution Prevention, Geology, and Soils)

Two geological units are present at McConnell AFB, the Wellington formation and young unconsolidated sediments. On the east side of base, the Wellington formation, Permian silty shale, is highly weathered at the surface to a depth of about 40 feet. The Wellington Formation reaches a maximum thickness of 550 feet in Sedgwick County and dips gently (approximately 10 feet per mile) to the west and southwest. Brown, yellow, and maroon clays characterize this material. On the west side of base, younger unconsolidated sediments of the Pleistocene Series overlie the Wellington shale. These sediments comprise a maximum thickness of 25 feet of reddish-brown silty clay with calcareous lenses. Soils derived from these two units at McConnell are moderately plastic and exhibit low permeability.

Impacts to the base geology and soils are not anticipated. Implementing Best Management Practices (BMP) during project activities would avoid or minimize impacts to soil from the proposed project. BMP may include installation of a silt fence around the perimeter of the construction site, hay bales to control surface water flow around culverts, covering equipment and construction materials, reseeding the site after construction activities are complete, and other site engineering practices.

1.4.1.6 Environmental Justice, Economic, and Social Impact

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, encourages federal facilities to achieve “environmental justice” by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

Stephen Banks of the Metropolitan Area Planning Department (Banks, 2000) has provided U.S. Census Bureau population estimates. The Sedgwick County population in 1990 was 403,662, and in January 2000 it was 458,216. The projected population for 2010 is 500,900. The racial percentage, calculated by Wichita State University, is 79% white, 12% black, 3% Asian, and 5% other.

There are no low income or minority communities located adjacent to the site. Base housing, located approximately one 0.5 miles east of the proposed action, is the nearest community. Properties located directly adjacent to the north, south, and east of MAFB boundaries are undeveloped, and properties located adjacent to McConnell’s west side are occupied by industrial businesses. Based on this information, MAFB concludes that the proposed project would not disproportionately affect minority or low-income populations. No environmental justice issues, adverse economic, or social impacts are expected (see Map 3, Appendix A).

1.4.1.7 Floodplains and Coastal Estuaries

No floodplains or coastal estuaries exist at McConnell AFB, therefore, the proposed action would require no consideration for these resources.

1.4.1.8 Unavoidable Adverse Impacts

If the proposed project is implemented, there will be minimal short-term unavoidable adverse impacts such as increased air and dust emissions and hazardous waste resulting from demolition and construction activities. However, no long-term unavoidable adverse impacts are expected from implementation of the proposed project.

1.4.2 Issues Studied In Detail

Environmental issues considered relevant to this environmental assessment include the following:

- Waste and Hazardous Materials
- Water Resources
- Biological Resources
- Socioeconomic
- Land Use
- Safety And Occupational Health
- Indirect and Cumulative Impacts
- Relationship Between Short-Term Uses and Enhancement Of Long-Term Productivity
- Irreversible And Irretrievable Commitment Of Resources

1.5 Decision(s) That Must Be Made

The decision that must be made is whether to implement the Preferred Action Alternative (Construct Base Civil Engineer Complex) or maintaining the status quo (No Action Alternative).

1.6 Applicable Regulatory Requirements And Required Coordination

This EA has been conducted in accordance with the President's Council on Environmental Quality (CEQ) regulations, Title 40 of the Code of Federal Regulations, as they implement the requirements of the National Environmental Policy Act (NEPA) of 1969, and Air Force Instruction (AFI) 32-7061 Environmental Impact Analysis Process as promulgated in 32 CFR Part 989. These regulations require federal agencies to analyze potential environmental impacts of proposed actions and alternatives and to use these analyses in making decisions on a proposed action. All cumulative effects and irretrievable commitment of resources must also be assessed

during this process. The CEQ regulations declare that an EA is required to accomplish the following objectives:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when an EIS is not necessary, and facilitate preparation of an EIS when necessary.

AFI 32-7061 as promulgated in 32 CFR 989, specifies the procedural requirements for the implementation of NEPA and the preparation of an EA. Other environmental regulatory requirements relevant to the Preferred Action and alternatives are also in this EA. Regulatory requirements including, but not restricted to the following programs will be assessed:

- Noise Control Act of 1972
- Clean Air Act
- Clean Water Act
- National Historic Preservation Act
- Endangered Species Act
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substance Control Act (TSCA) of 1970
- Occupational Safety and Health Act (OSHA)

Requirements also include compliance with Executive Order (EO) 11988, Floodplain Management; EO 11990, Protection of Wetlands; and EO 12898, Environmental Justice.

SECTION 2.0: DESCRIPTION OF ALTERNATIVES

2.1 Introduction

This section provides a description of the Preferred Action, alternatives to the Preferred Action, alternatives considered but eliminated from detailed study, and criteria uses to evaluate the different alternatives.

2.2 Selection Criteria For Alternatives

The following criteria are the selection criteria for the Preferred Action and alternatives.

- Ability of CE to perform its mission.
- Cost to renovate versus cost to demolish and rebuild.
- Health and safety of MAFB personnel.
- Cumulative environmental impacts.

2.3 Alternatives Considered But Eliminated From Detailed Study

Several options were evaluated by Civil Engineering (CE) in a "Certificate of Satisfactory Economic Analysis", dated 16 August 1991, in an "Economic Analysis", performed by Wilson and Company, dated 14 October 1993, and a repeat "Economic Analysis", dated 10 February 2000. The studies considered the following alternatives: 1) Status Quo (No Action Alternative), 2) Renovating Existing BCE Facilities; 3) New Construction; and 4) Construction Of Additions To Existing Structures.

An important consideration in determining which alternative to choose is an evaluation of the benefits, both tangible and intangible, each alternative will yield. The best alternative should be identified on the basis of cost/benefit analysis. Intangibles include those factors which are neither monetary nor otherwise quantifiable. Intangibles are generally difficult to deal with in an economic analysis because they lack a common frame of reference from which they can objectively be compared. To resolve this difficulty a measurement system was utilized to evaluate the benefits of each alternative. First a point weight (1 to 6) was developed to show the relative importance assigned to each of

the three benefits. Each alternative was given a raw score between -3 and +3 to quantify how well they met or exceeded each benefit criterion. The raw scores were then multiplied by the point weight assigned to the particular benefit in order to determine the benefit value. These values were then totaled to obtain a score for each alternative.

The following categories of benefits were considered in alternative analysis: 1) Function (how the facilities provided for each alternative function in terms of suitability of the spaces for their intended use; 2) Health and Safety (how well facilities provide working conditions conducive to the health and safety of personnel; 3) Energy Efficiency (measures the efficiency of building envelopes and HVAC systems in minimizing energy usage); 4) Communication (effectiveness of facilities in enhancing communication and inter-office coordination); 5) Traffic Flow (measures efficiency and logic of traffic flow); and 6) Morale/Retention (measures morale and personnel retention factors).

The construction of additions to the existing BCE facilities to alleviate space deficiencies was removed from further consideration by the economic studies. Construction of additions was not considered feasible due to the configuration of existing facilities and lack of sufficient land areas next to those facilities needing additional space.

For the other three alternatives, costs were discounted at an annual discount rate of 5 percent to determine the Net Present Value (NPV) of each alternative. Results of the analysis determined that Renovation's NPV is the most costly with a cost of \$26,355,683 as compared to the cheaper New Construction \$25,787,049 and even cheaper Status Quo \$22,072,690. Also, while renovation can solve the problems of upgrading standards, it does not address the problems of centralization, communication, and adequate facility size.

Despite the lower cost of the Status Quo option, the economic analysis determined that the New Construction option far outweighed the Status Quo option in the benefit analysis. New Construction scored a superior rating on all six categories of the benefit analysis and renovation received the second highest rating. The Economic Analysis of

the different alternatives determined that the New Construction alternative would provide efficient and effective execution of CE's mission. The objective of health and safety would be enhanced and solidified by the proposed BCE complex. In addition the proposed project would cut utility cost by nearly \$13,000 per year due to the increased efficiency in energy consumption. A centrally located facility would make traffic less complicated for CE, and morale and retention would increase due to a much more conducive working environment.

2.4 Description of Proposed Alternatives

2.4.1 Preferred Action Alternative

The location of the proposed action (and the alternative action) would be at McConnell AFB, on the grass lot (currently occupied by a softball field) north of existing BCE facilities, between Kansas Street and Hutchinson Street, near the main base entrance (see Maps 1 and 2, Appendix A). In an effort to reduce dislocations of current functions during construction activities, the existing softball field would be demolished to permit construction of the proposed new BCE complex. The new BCE complex would require approximately 8-acres and would be paved (see Figure 1, Appendix A).

The selected construction site would have a prominent presence and would be the first complex visible past the Visitor's Center. The proposed BCE complex would consist of two, multi-story, L-shaped buildings (east and west) separated by a paved GOV parking lot (see Figures 2, 3, and 4, Appendix A). The East Building would house Administration, Readiness, and most of the shops, and would be set parallel to Kansas Street and then west to create the southeast corner of the proposed new complex (see Figures 5 and 6, Appendix A). With pitched standing seam metal roofs and overhangs shading office and corridor glazing, the East Building would present an office-like appearance to anyone entering the base. "Front door" access to the entire complex would be from Pittsburg Street to the south, in order not to introduce a new intersection in the first stretch of Kansas Street.

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Vehicular and equipment access to the yard of the complex comes from the west off Hutchinson Street between existing Buildings 680 and 683 (southwest corner of the yard). Loop access would be permitted by exiting through the north perimeter of the yard just east of the Logistics warehouse (northwest corner of the complex). This would connect to new drives/streets between the complex and the new proposed waste storage tank either back to Hutchinson or straight north all the way to Salina Street.

Within the equipment yard, the west “zone” is for maneuvering in and out of Logistics, Heavy Repair, and Power Production. The east “zone” is dedicated to maneuvering and support spaces for the various shops in the East Building. The center “zone” is dedicated to vehicle and equipment storage, both covered and uncovered. All 150 GOV could be accommodated within the yard. However, many of the pick-ups, small vans, and panel trucks can be parked and locked in the parking lots outside the yard’s perimeter fence to

allow maximum flexibility for secure storage of the large pieces of equipment within the yard.

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other new facilities such as the adjacent transportation complex. Roof drainage would be gutters and downspouts. All metal roofing and flashing would be dark brown pre-finished metal to match the base guidelines and the existing buildings. The roof structure would be metal deck supported by sloped steel bar joist and structural steel framing. The interior wall partitions would be both concrete masonry units and metal stud with gypsum wallboard finished construction, depending on durability requirements of the adjacent spaces. The site building would be fully protected by hydraulically calculated wet-pipe sprinkler system designed in accordance with Military Handbook 1008C and in accordance with requirement of the McConnell Air Force Base Fire Department. The sprinkler system would be zoned, and Class I stand pipes would be installed. Smoke detectors would be provided in the supply and return duct systems of all air handler units, which will shut down their respective air handler if smoke is detected.

Various site utility improvements would be required, including extending lines to the site and taking storm drainage underneath Kansas Street. Primary fuel for the site buildings would be natural gas for heating. No backup fuel source would be provided. Electricity would be the primary cooling energy source. A backup generator would be included in the project. The site buildings would be connected to the sanitary sewer main along Hutchinson Street. A new storm drainage culvert under Kansas Street would route much of the collected drainage to existing surface collection areas. All underground ferrous piping materials would be cathodically protected with sacrificial anodes. In summary, the proposed project would afford McConnell the following opportunities:

Improve the appearance of the BCE Complex both from the main Kansas Street entrance to the base and from other vantage points.

- Consolidate all major BCE functions.
- Provide a large contiguous equipment and service yard.
- Demolish up to eighteen existing building currently housing the programs for the proposed new BCE complex.
- Provide 150 GOV and 200 POV parking.

2.4.3 No Action Alternative

Under the No Action Alternative, BCE would continue to use the existing facilities. Span of control and unit operational efficiency would continue to suffer and BCE would continue to have problems performing its mission in the event of another base emergency. The overall base mission would suffer and the health and safety of base personnel would be compromised during another emergency situation.

Continued operations in the existing BCE facilities will continue to require extensive maintenance and repair due to the age and condition of the facilities. The average annual maintenance will increase every five years as the facilities continue to age. Annual utility cost will be higher than in other alternatives because energy conservation renovations are not available in this alternative.

Wood constructed facilities require paint and roof repair every five years. The exception is year 2001 where 12,500 SF of roofing was replaced. Heating and air conditioning units are scheduled for replacement in each facility in the next 25 years. In addition, carpet will require replacement every five years. Furnishings would be replaced every 10 years. This replacement would include office furniture, computer equipment, and a Computer Aided Design Drafting (CADD) system.

2.5 Description Of Past And Reasonably Foreseeable Future Actions Relevant To Cumulative Impacts

No past or reasonably foreseeable future actions relevant to the cumulative impacts of the proposed project are anticipated.

2.6 Identification Of Preferred Action Alternative

The Preferred Action Alternative would be to construct a new BCE complex.

SECTION 3.0: AFFECTED ENVIRONMENT

3.1 Introduction

This section describes the characteristics of the existing natural and man-made environment that could be affected by the Preferred Action and alternatives. This establishes the basis for assessing the different impacts of the three alternatives. The respective impacts of the three alternatives are more fully discussed in Section 4.0.

3.2 Wastes, Hazardous Materials, And Stored Fuels

3.2.1 Wastes

McConnell AFB annually generates approximately 2,786 tons of non-hazardous waste from industrial and administrative activities. The total amount of non-hazardous waste generated from 22 CES operations accounts for 1 ton of non-hazardous waste or 0.04% of the amount of non-hazardous waste generated at MAFB. Approximately 30% (830 tons) of the non-hazardous waste generated annually at MAFB is recycled.

Hazardous waste generation at MAFB is about 30 tons annually, mainly from aircraft maintenance and fueling operations. Review of the Environmental Flight records, indicate that 22 CES operations accounts for approximately 2 tons, or about 7% of the hazardous waste generated at MAFB. Types of hazardous waste generated by 22 CES operations include: paint waste, blast media, fuel filters, adhesives, wastewater, aerosols, contaminated JP-8 (jet fuel), and spent solvents. These wastes are stored in 6 satellite accumulation points (SAPs) located at Entomology, HVAC, GOCESS, Power Pro, Hazardous Waste Office, and the Recycling Center.

3.2.2 Hazardous Materials

Due to the nature of its mission the 22 CES is required to use a variety of hazardous materials. A hazardous material is a substance or material, in any quantity or form, that may pose an unreasonable risk to health, safety, and property, when released from its container. Review of the Environmental Flight records indicates that annually, the 22 CES uses approximately 17,700 pounds of hazardous materials. Types of hazardous materials used include: petroleum products (fuels, lubricants, and oils), paints and

enamels, varnish, wax, aerosols, solvents, acids, caustics, cleaners, airtifreeze, various types of chemicals for specialized applications, compressed gases, and adhesives,

3.2.3 Stored Fuels

There are 7 aboveground storage tanks (ASTs), that are used to store used oil, diesel fuel, gasoline, propane gas, and lubricants, located at 22 CES MAFB facilities (see Map 4, Appendix A).

3.3 Water Resources

3.3.1 Groundwater

Groundwater at McConnell is not used as a potable source, due to its limited availability in shallow unconfined zones, and again in the deeper Wellington shale (see Section 3.6 – Geology and Soils). Groundwater occurs in two water-bearing units at McConnell AFB. The shallow unconfined water-bearing units produces water from unconsolidated Pleistocene deposits and weathered Wellington Formation bedrock. Unconsolidated Pleistocene deposits and weathered bedrock, such as those present at McConnell AFB, are generally fine-grained with low permeability. These deposits yield small quantities (generally less than 2 gpm) of hard, mineralized water to base monitoring wells. Water level data indicates that depth to groundwater in the shallow unit ranges up to 16 feet below land surface (BLS). The direction of groundwater flow in this unit is generally toward local surface water drainage features such as McConnell Creek, which flows south-southwest and eventually drains in to the Arkansas River.

3.3.2 Surface Water

Surface water generally runs to the south in ephemeral streams, which dry up during dry periods. Most surface water traveling through the base collects into an unnamed tributary of the Arkansas River (commonly referred to as McConnell Creek), which exits the south end of McConnell over an outfall weir. McConnell has received water rights through the U.S. Department of Agriculture for the purpose of utilizing surface water runoff to supplement irrigation of the golf course.

Flooding analysis indicates that construction of the proposed project would increase surface water runoff at Outfall 022. However, the estimated increase in surface water

runoff is not expected to add any additional burden to the effectiveness of current floodwater controls already in place. The proposed project would increase the acres of paved impervious surface from 8-acres to approximately 16-acres (see Appendix B).

Best Management Practices (BMP) would be applied during the project to control surface water runoff to minimize the environmental impact to McConnell Creek. BMP may include installation of a silt fence around the perimeter of the construction site, hay bales to control surface water flow around culverts, covering equipment and construction materials, reseeding the site after construction activities are complete, and other site engineering practices.

3.3.3 Wetlands

Department of Defense Instruction Number 4715.3, paragraph 4.2.10 states “DOD operations would be managed for the goal of no net loss of wetlands.” This position is restated in AFI 32-7064, paragraph 3.1. McConnell has a limited number of wetland areas, consisting mostly of man-made ponds located on the golf course. A small area of riparian habitat also exists around McConnell Creek.

Review of the McConnell wetlands map indicated that the Preferred Action Alternative is located approximately 0.25 miles west of McConnell Creek (see Map 5, Appendix A). Areas located adjacent to McConnell Creek are classified as a “wetland”; however, according to the Environmental Flight Wetland Program Manager, the proposed project would not involve disturbing or the taking of any identified wetlands. To minimize potential environmental impact to identified wetlands located east of the Preferred Action Alternative, BMP would be used during the project.

3.4 Biological Resources – Federal-listed Threatened or Endangered Species and State-Listed Threatened or Endangered Species

The 1999 Kansas Biological Survey completed a survey for protected and rare species and exemplary natural areas at McConnell. The final report concluded that no Federally listed threatened or endangered species or species habitat are located on McConnell Air Force Base. During the course of this environmental analysis, McConnell contacted the U.S. Fish and Wildlife Service to verify the absence of threatened or endangered species or species habitat at the proposed building addition. The U.S. Fish and Wildlife Service

verified that there are no Federally listed threatened or endangered species or species habitat located at the proposed action site (see Appendix D). A copy of the Kansas Biological Survey report is maintained by Environmental Flight and is available for review upon request.

Although the loggerhead shrike is not a listed species, the survey recommended that there be no loss of habitat. If the “Preferred Action Alternative” were implemented, the loggerhead shrike would not experience any loss of habitat. To protect the loggerhead shrike, BMP would be used during construction of the proposed facility to minimize any environmental impacts on the species.

3.5 Socioeconomic

US Census Bureau statistics for the year 2000 for Sedgwick County show total population estimates are at 458,216 people. The racial percentage, calculated by Wichita State University, is 79 percent white, 12 percent black, 3 percent Asian, and 5 percent other.

Implementation of the “Preferred Action Alternative” would cost approximately \$19.6 million to implement. Sales of equipment, employment opportunity, and secondary retail purchases on the local community will add to the annual \$350 to \$400 million contribution McConnell currently makes to Wichita and Derby.

3.6 Land Use

McConnell AFB is an industrial facility, with a Standard Industrial Classification (SIC) code of 9711. All facilities at McConnell directly or indirectly support airfield activities. Land uses at McConnell AFB are divided into nine functional classes, of which airfield land use accounts for 41 percent of total land area (1,043 acres) and open space accounts for 30 percent of total land area (752 acres). The other seven categories include housing, outdoor recreation, industrial, aircraft maintenance, community, administrative, and medical. Construction of the preferred alternative would convert approximately 8-acres of open space to a buildings, parking lots, and lawns.

3.7 Safety and Occupation Health

The Preferred Action Alternative would have a positive impact on safety and occupational health of base personnel. In the event of another base emergency, such as the 1991 tornado, improved span of control would result and faster response by the 22 CES to the emergency and could save property and lives in the process.

3.8 Indirect And Cumulative Impacts

“Indirect and Cumulative Impacts” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts analysis requires an analysis of what is the geographical area of the potential impacts and what actions in the past, present, and future are relevant to an analysis of cumulative impacts.

Review of the Preferred Action Alternative, and the No Action Alternative, indicates that the geographical area of the potential impacts and past, present, and future cumulative impacts are limited to MAFB property. Table 3.8.1 summarizes the expected short term and long term environmental impacts for each of the evaluation criteria for each of the alternative actions considered.

Table 3.8-1: Comparison of Environmental Effects Of the Preferred Action and Alternatives

Evaluation Criteria	Alternative 1: Preferred Action	Alternative 2: Renovate Building	Alternative 3: No Action
Air Quality	Short-Term: Minimal Long-Term: No Impact	Short-Term: Minimal Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Noise	Short -Term: Minimal Long -Term: No Impact	Short -Term: Minimal Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Waste, Hazardous Materials, and Stored Fuels	Short -Term: Minimal Long -Term: Positive Impact	Short -Term: Minimal Long -Term: Minor Positive Impact	Short-Term: No Impact Long-Term: No Impact
Water Resources	Short -Term: Minimal Long -Term: Minimal	Short -Term: Minimal Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Land Use	Short -Term: Minimal Long -Term: No Impact	Short -Term: Minimal Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Biological Resources	Short -Term: Minimal Long -Term: No Impact	Short -Term: Minimal Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Socioeconomic	Short -Term: Positive Long -Term: Positive	Short -Term: Positive Long -Term: Positive	Short-Term: No Impact Long-Term: Negative
Cultural Impact	Short -Term: No Impact Long -Term: No Impact	Short -Term: No Impact Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Transportation	Short -Term: Minimal Long -Term: No Impact	Short -Term: Minimal Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Airspace/Airfield Operations	Short -Term: No Impact Long -Term: No Impact	Short -Term - No Impact Long -Term - No Impact	Short-Term: No Impact Long-Term: No Impact
Safety and Occupational Health	Short -Term: Positive Long -Term: Positive	Short -Term: Positive Long -Term: Positive	Short-Term: Negative Long-Term: Negative
Environmental Mangement	Short -Term: Minimal Long -Term: No Impact	Short -Term: Minimal Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Environmental Justice	Short -Term: No Impact Long -Term: No Impact	Short -Term: No Impact Long -Term: No Impact	Short-Term: No Impact Long-Term: No Impact
Indirect and Cumulative Impacts	Short -Term: Minimal Long -Term: Positive	Short -Term: Minimal Long -Term: Positive	Short-Term: No Impact Long-Term: No Impact
Unavoidable Adverse	Short -Term: Minimal	Short -Term: Minimal	Short-Term: No Impact

Evaluation Criteria	Alternative 1: Preferred Action	Alternative 2: Renovate Building	Alternative 3: No Action
Impacts	Long –Term: No Impact	Long –Term: No Impact	Long-Term: No Impact
Relationship Between Short-Term Uses and Enhancement of Long- Term Productivity	Short –Term: Positive Long –Term: Positive	Short-Term: Positive Long-Term: Positive	Short-Term: Negative Long-Term: Negative
Irreversible And Irretrievable Commitment Of Resources	Short –Term: Minimal Long –Term: Minimal	Short-Term: Minimal Long-Term: Minimal	Short-Term: No Impact Long-Term: No Impact

3.9 Relationship Between Short-Term Uses And Enhancement of Long-Term Productivity

In the short-term the Preferred Action Alternative would better enable the 22 CES to meet its mission requirements by providing adequate work and storage space for personnel, equipment, and materials. Long-term productivity would be enhanced by improving span of control during emergency situations, enabling better coordination between the various functions, and providing facilities better suited to meet the 22 CES mission requirements.

3.10 Irreversible And Irretrievable Commitment Of Resources

If the Preferred Action Alternative were implemented, there would be an irreversible and irretrievable commitment of money, man-hours, and equipment and materials (building materials and construction equipment) to the project.

SECTION 4.0: ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

The effects of the preferred action and alternatives on the affected environment are discussed in this section.

4.2 Wastes, Hazardous Materials And Special Waste, and Stored Fuels

4.2.1 Wastes

4.2.1.1 Preferred Action Alternative

Non-Hazardous Waste: If the Preferred Action Alternative were implemented, non-hazardous materials (construction and demolition debris) would be generated by the project. It is estimated that the project would result in approximately 237 tons of non-hazardous waste resulting mostly from demolition activities (metal, concrete, miscellaneous debris, and asphalt and concrete pavement). However, it is also assumed that the project contractor would be responsible for disposing of all non-hazardous waste that would be generated if the Preferred Action Alternative were implemented. Consequently the tonnage of non-hazardous waste generated by the project would not be included in the annual amount of non-hazardous waste generated by MAFB.

If the Preferred Action Alternative were implemented, the annual amount of non-hazardous waste generated by the base could be reduced by a reduction in loss of building materials due to lack of adequate storage space.

Hazardous Waste: Implementation of the Preferred Action Alternative could result in a minor increase in the production of hazardous waste. Any short-term increase in waste would be temporary, and McConnell's 90-day storage facility and disposal contractor would be able to easily accommodate the temporary increase in both types of waste. McConnell AFB's aggressive application of hazardous material reduction, reuse, and recycling should result in no significant difficulties dealing with any additional hazardous waste that may be generated during demolition activities. In addition, if the Preferred Action Alternative were implemented, no increase in the number of SAPs is expected.

Special Waste: Review of the Environmental Flight files indicate that several of the buildings that would be demolished if the Preferred Action were implemented may contain asbestos containing materials (ACM). MAFB currently generates approximately 5 tons of special waste annually. Identified ACM would have to be removed prior to demolition and disposed of as a special waste at an approved disposal facility. Implementation of the Preferred Action Alternative would most likely result in a short-term increase in special waste.

4.2.1.2 No Action Alternative

Under the No Action Alternative, there would be no impact on the amount of waste generated MAFB.

4.2.2 Hazardous Materials

4.2.2.1 Preferred Action Alternative

Under the Preferred Action Alternative, no change in the amount of hazardous materials handled by the 22 CES in the performance of its mission is expected.

4.2.2.2 No Action Alternative

Under the No Action Alternative, there would be no impact on hazardous materials used by the 22 CES.

4.2.3 Stored Fuels

4.2.3.1 Preferred Action Alternative

Under the Preferred Action Alternative no reduction in the number of storage tanks used by the 22 CES in the performance of its mission is expected.

4.2.3.2 No Action Alternative

Under the No Action Alternative, there would be no impact on storage tanks used by the 22 CES in the performance of its mission.

4.3 Water Resources

4.3.1 Preferred Action Alternative

Flooding analysis indicates that construction of the proposed project would increase surface water runoff at Outfall 022. However, the estimated increase in surface water runoff is not expected to add any additional burden to the effectiveness of current floodwater controls already in place. The proposed project would increase the acres of paved impervious surface from 8-acres to approximately 16-acres.

Best Management Practices (BMP) would be applied during the project to control surface water runoff to minimize the environmental impact to McConnell Creek. BMP may include installation of a silt fence around the perimeter of the construction site, hay bales to control surface water flow around culverts, covering equipment and construction materials, reseeding the site after construction activities are complete, and other site engineering practices.

4.3.3 No Action Alternative

There would be no impact on MAFB water resources.

4.4 Biological Resources

4.4.1 Preferred Action Alternative

Implementation of the Preferred Action Alternative would have minimal impact on MAFB biological resources.

4.4.3 No Action Alternative

There would be no impact on MAFB biological resources.

4.5 Socioeconomic

4.5.1 Preferred Action Alternative

Implementation of the Preferred Action Alternative would cost approximately \$19.6 million to implement. Sales of equipment, employment opportunity, and secondary retail purchase on the local community will add to the annual \$350 to \$400 million contribution McConnell currently makes to Wichita and Derby. Therefore, implementation of the

Preferred Action Alternative would provide a short-term beneficial impact to local contractors and retailers.

The Preferred Action Alternative would have a long-term socioeconomic benefit by eliminating the need to spend scarce maintenance dollars on an aging building, removing site personnel from a potentially unhealthy work environment, and improving morale of personnel assigned to the building. The project would have the added benefit of eliminating increasing span-of-control to better enable the 22 CES to better meet its mission requirements.

4.5.3 No Action Alternative

Under the No Action Alternative, there would be a negative socioeconomic impact. BCE would continue to use the existing facilities. Span of control and unit operational efficiency would continue to suffer and BCE would continue to have problems performing its mission in the event of another base emergency. The overall base mission would suffer and the health and safety of base personnel would be compromised during another emergency situation.

Continued operations in the existing BCE facilities will continue to require extensive maintenance and repair due to the age and condition of the facilities. The average annual maintenance will continue to increase as the facilities continue to age. Annual utility cost will be higher than in other alternatives because energy conservation renovations are not available in this alternative.

Wood constructed facilities require paint and roof repair every five years. The exception is year 2001 where 12,500 SF of roofing was replaced. Heating and air conditioning units are scheduled for replacement in each facility in the next 25 years. In addition, carpet will require replacement every five years. Furnishings would be replaced every 10 years. This replacement would include office furniture, computer equipment, and a Computer Aided Design Drafting (CADD) system.

4.6 Land Use

4.6.1 Preferred Action Alternative

The Preferred Action Alternative would require approximately 8 acres of undeveloped land located north of existing BCE buildings.

4.6.2 No Action Alternative

Under the No Action Alternative, no impacts to land use will be realized.

4.7 Safety and Occupation Health

4.7.1 Preferred Action Alternative

The Preferred Action Alternative would improve safety and occupation health of site personnel by enabling the BCE to better perform its mission by improving command and control between the many different functions. In the event of another disaster like that suffered on 26 April 1991, when a tornado struck the base, BCE response would be better prepared to respond thereby improving safety and possibly saving lives of personnel at MAFB. The proposed BCE complex would significantly decrease communication and response delays and enable Damage Assessment Teams (DAT) to remain assembled in one location. In addition, the proposed new facilities would be large enough to allow storage of all materials requiring protection from the weather. Inadequate material control facilities would result in unacceptable losses of construction materials and supplies due to weather damage and reduce resource protection.

4.7.3 No Action Alternative

Under the No Action Alternative there would be short-term and long-term impacts to safety and occupation health. Span of control problems during an emergency could increase emergency response times and a corresponding loss of life and lack of adequate material storage space and equipment storage space would continue to impact worker safety.

4.8 Indirect and Cumulative Impacts

4.8.1 Preferred Action Alternative

There would be minor indirect and cumulative impacts associated with the Preferred Action Alternative that would be confined to MAFB property. Negative impacts are expected to be minor and would be more that offset by short-term and long-term positive impacts.

4.8.3 No Action Alternative

Under the No Action Alternative, there would be both short-term and long-term negative impacts on “Indirect and Cumulative Impacts.”

4.9 Relationship Between Short-Term Uses and Enhancement Of Long-Term Productivity

4.9.1 Preferred Action Alternative

Implementation of the Preferred Action Alternative would have a positive effect on long-term productivity by consolidating all major BCE functions, providing a large contiguous equipment and service yard, demolishing up to eighteen existing buildings, providing GOV parking of 150 vehicles and 200 POV, and providing adequate covered material storage space.

4.9.3 No Action Alternative

Under the No Action Alternative there would be both short-term and long-term negative impacts. The 22 CES would continue to experience span of control between the major BCE functions, inadequate material storage space would continue to result of loss of construction materials, and the base would continue to have to commit scarce resources to maintain building that have exceeded their design life.

4.10 Irreversible and Irretrievable Commitment Of Resources

4.10.1 Preferred Action Alternative

Implementation of the Preferred Action Alternative would result in the loss of \$19.6 million and 8 acres of undeveloped land.

4.10.3 No Action Alternative

Under the No Action Alternative there would be no irreversible and irretrievable commitment of resources.

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REFERENCE

1. U.S. Air Force Instruction AFI- 32-7061, as promulgated in 32 C.F.R. 989, Environmental Impact Analysis Process
2. McConnell AFB General Plan, 1994
3. Soil Survey of Sedgwick County, Kansas, 1979
4. McConnell AFB Air Installation Compatible Use Zone (AICUZ) Study, Updated 1999
5. McConnell AFB Installation Restoration Program, Draft Investigation Report, 1989
6. McConnell AFB Hazardous Waste Management Plan, 2002
7. Air Emission Inventory: 2002 Operations at McConnell AFB
8. McConnell AFB Wetland Evaluation, 2001

APPENDICES

APPENDIX A: REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS AND
SITE LOCATION MAPS

APPENDIX B: HYDROLOGY AND WETLANDS STUDY

APPENDIX C: CULTURAL RESOURCES RECONNAISSANCE SURVEY

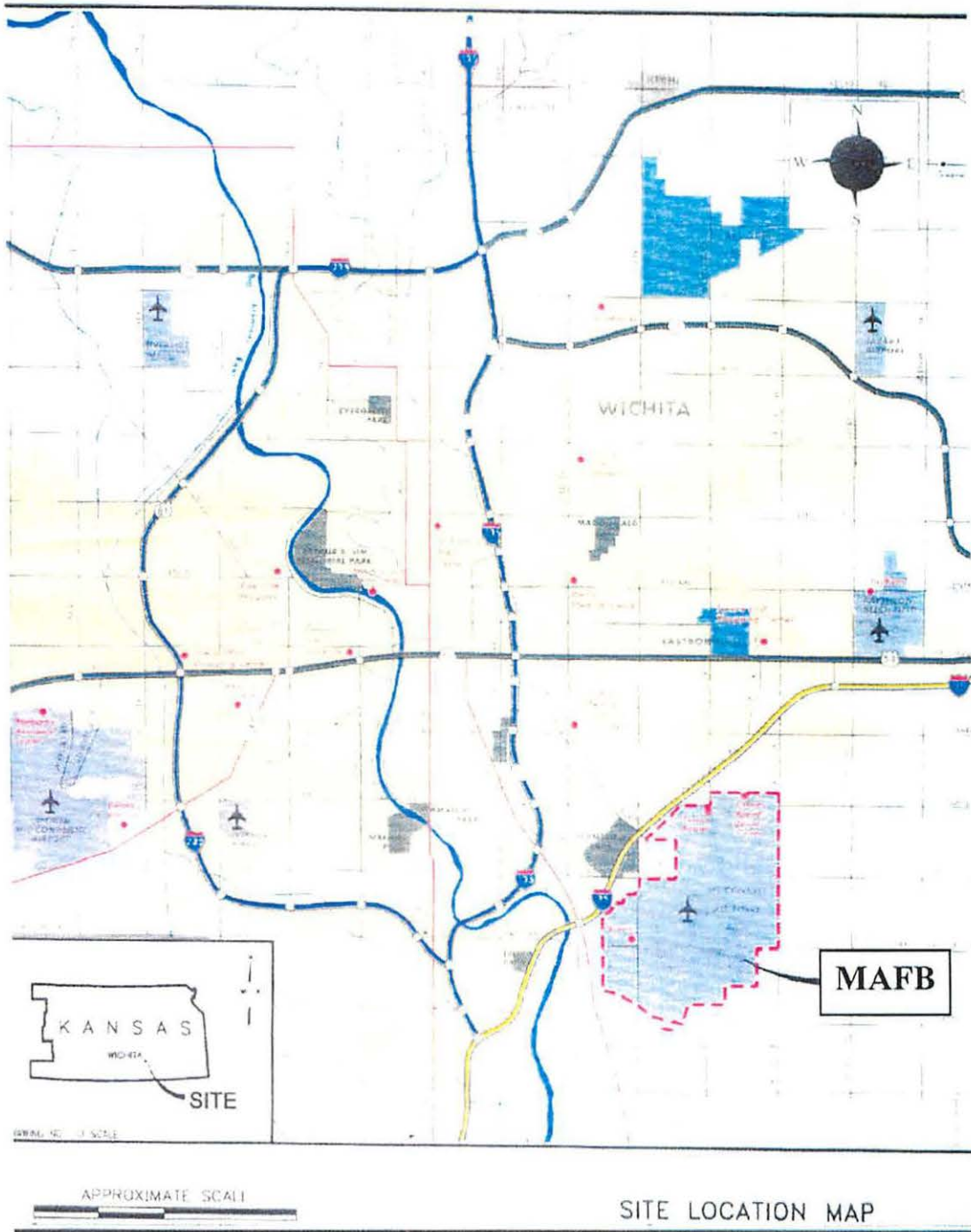
APPENDIX D: THREATENED AND ENDANGERED SPECIES SURVEY

APPENDIX E: AICUZ STUDY

APPENDIX F: AIR QUALITY CONFORMITY DATA

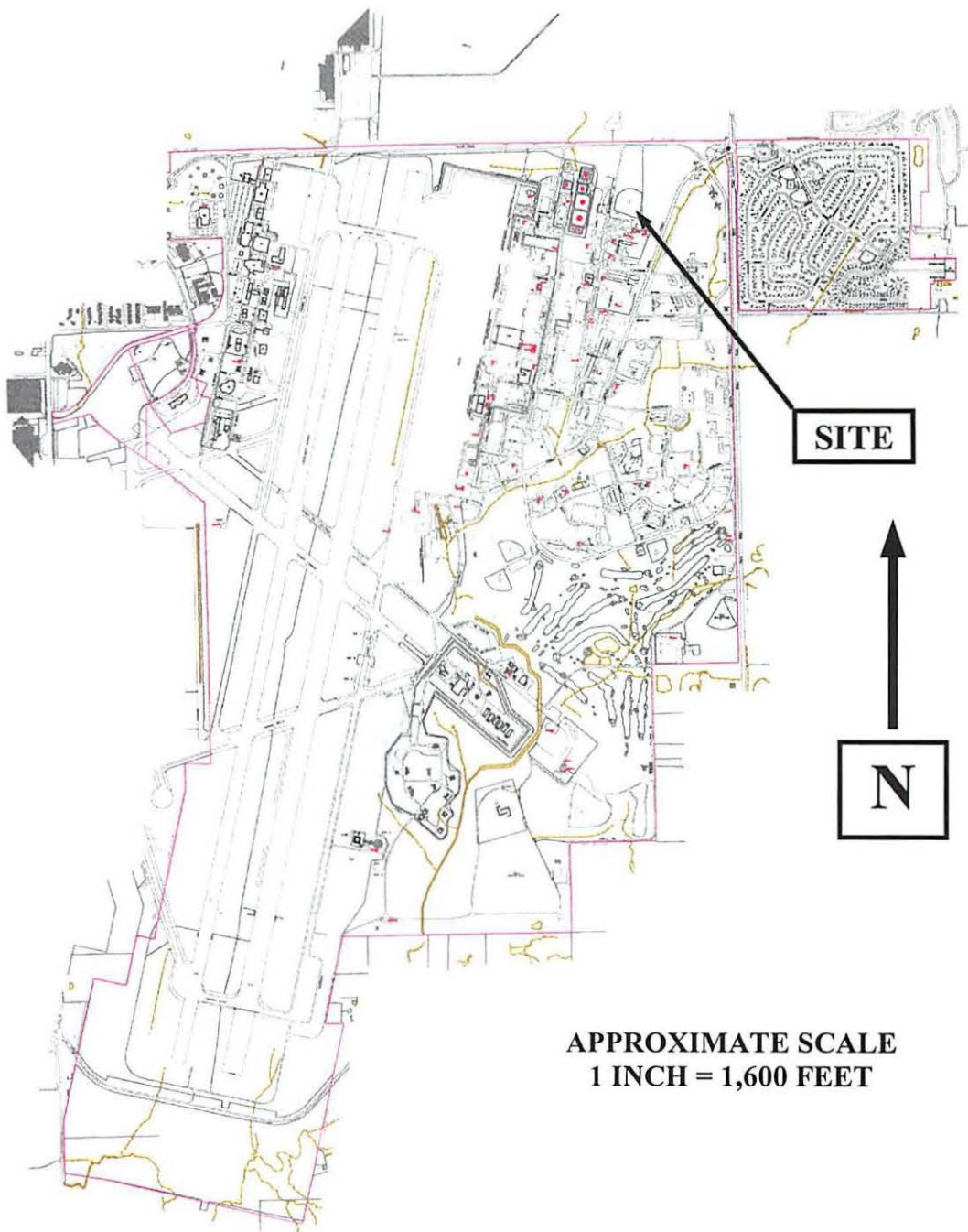
APPENDIX G: PUBLIC REVIEW COMMENTS, NEWSPAPER ARTICLES, AND
RESPONSES

**APPENDIX A
REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS
AND SITE LOCATION MAPS AND FIGURES**



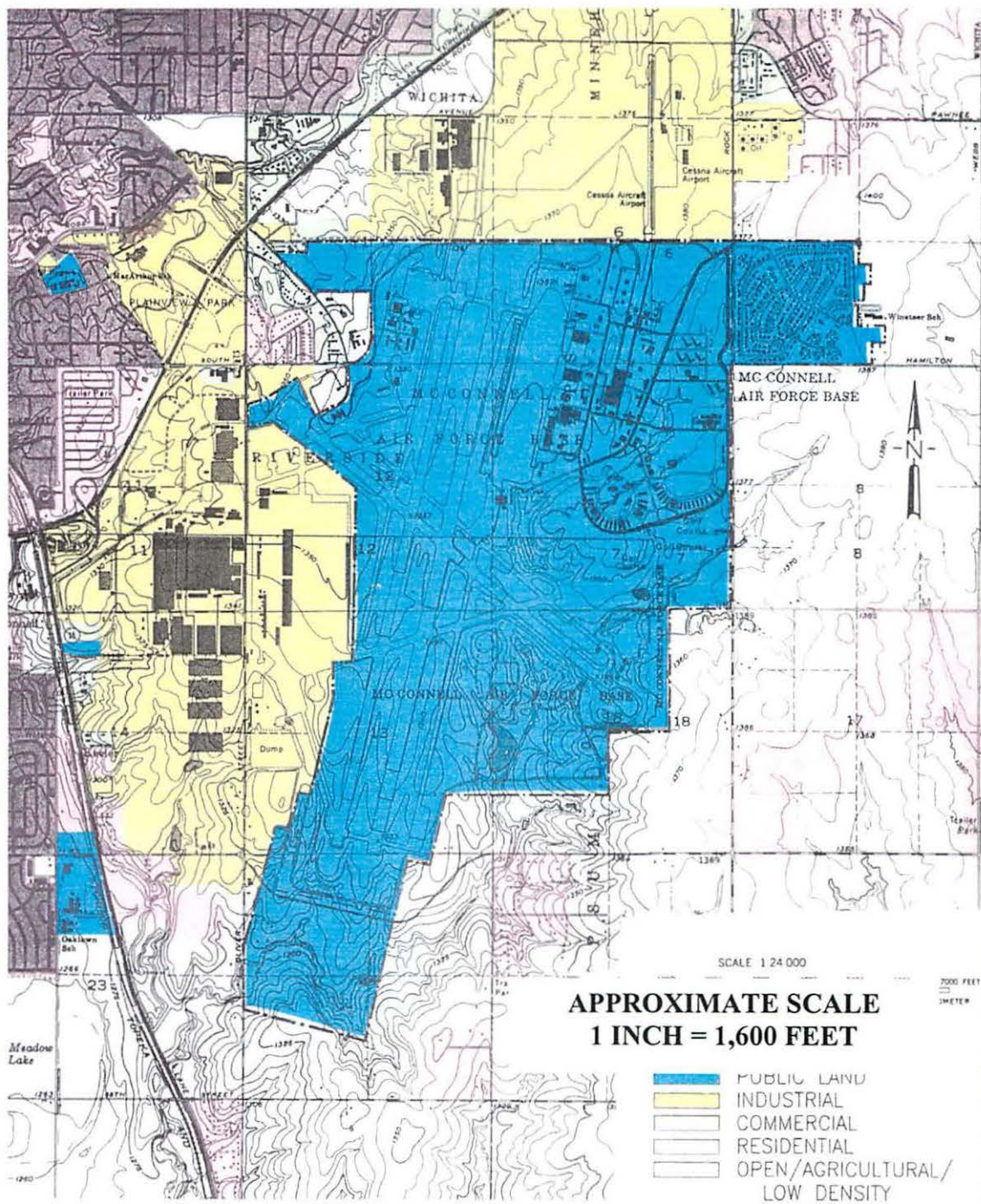
**ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX**

**MAP 1
MCCONNELL AFB
LOCATION MAP**



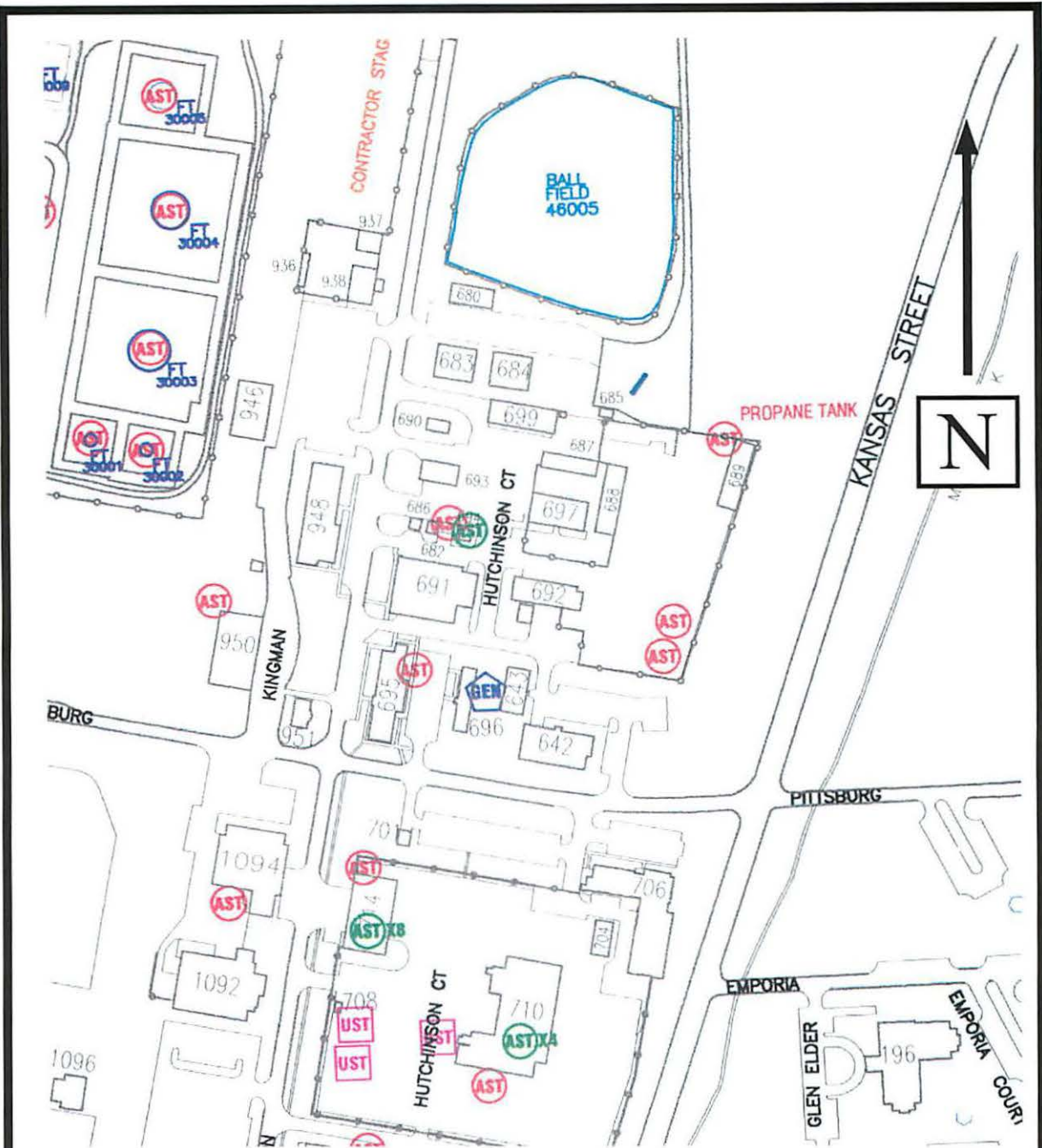
ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

MAP 2
MCCONNELL AFB
LOCATION MAP



ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

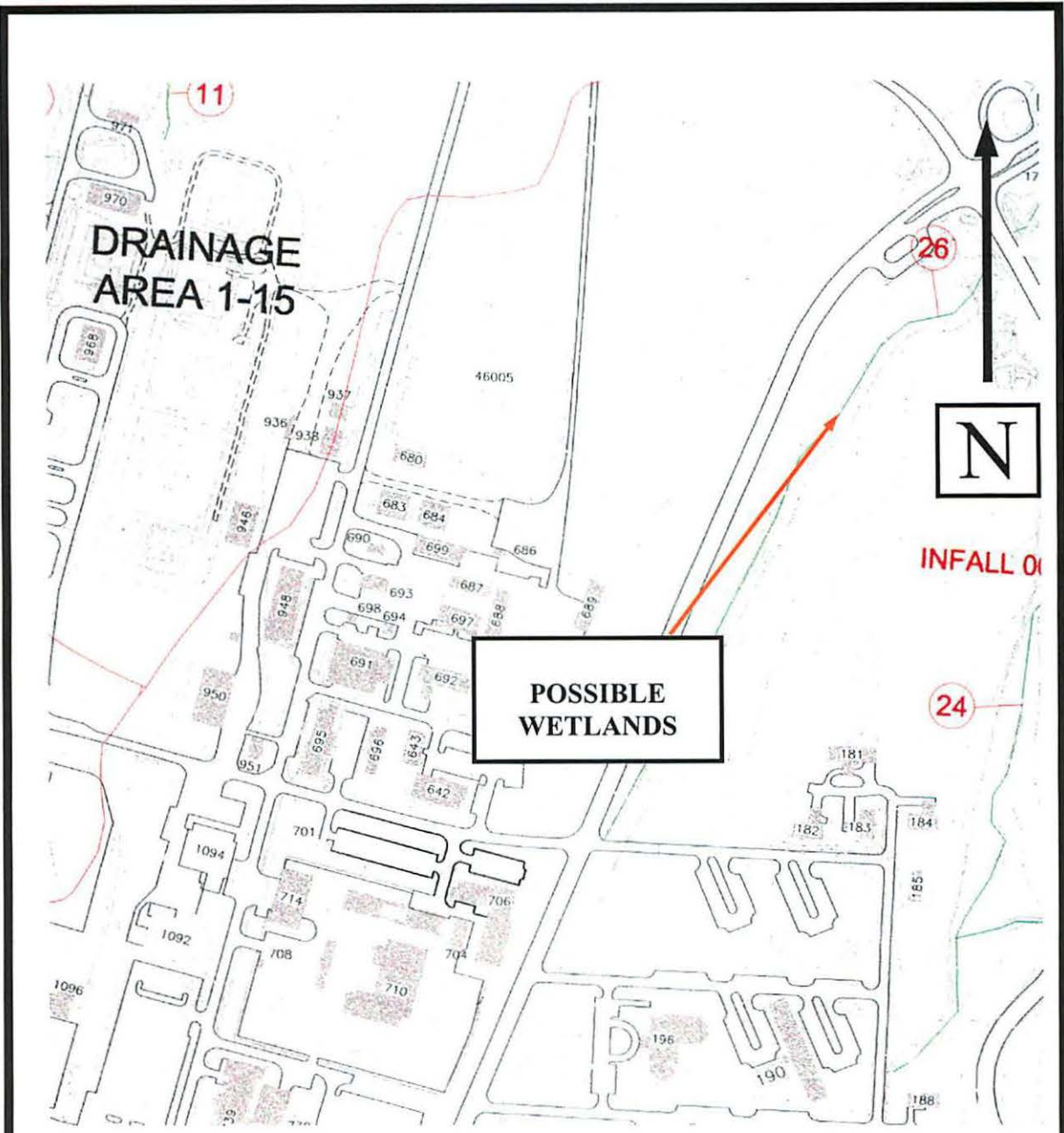
MAP 3
MC CONNELL AFB
ADJACENT LAND USE MAP



Scale: 1 Inch Is Approximately 300 Feet

ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

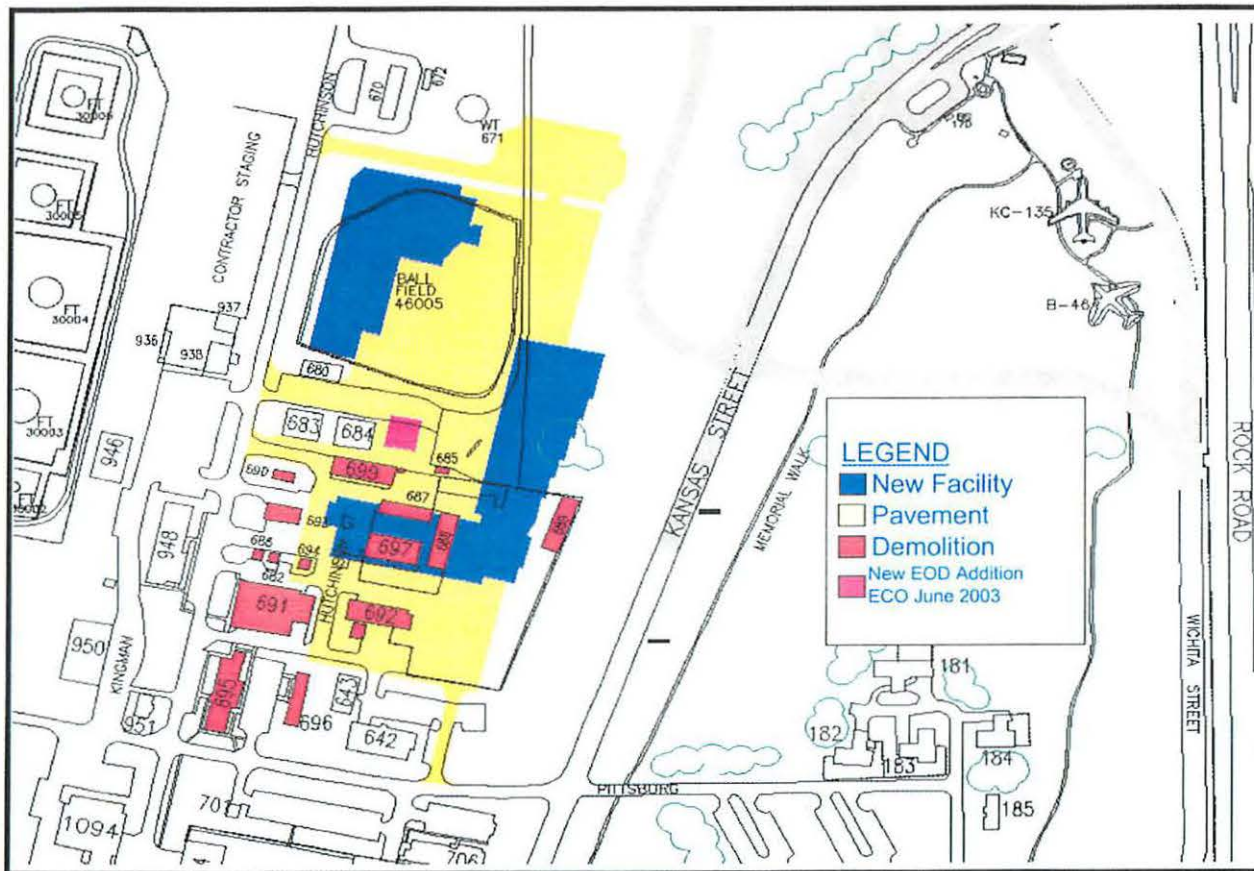
MAP 4
MCCONNELL AFB
STORAGE TANK MAP



Scale: 1 Inch Is Approximately 400 Feet

ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

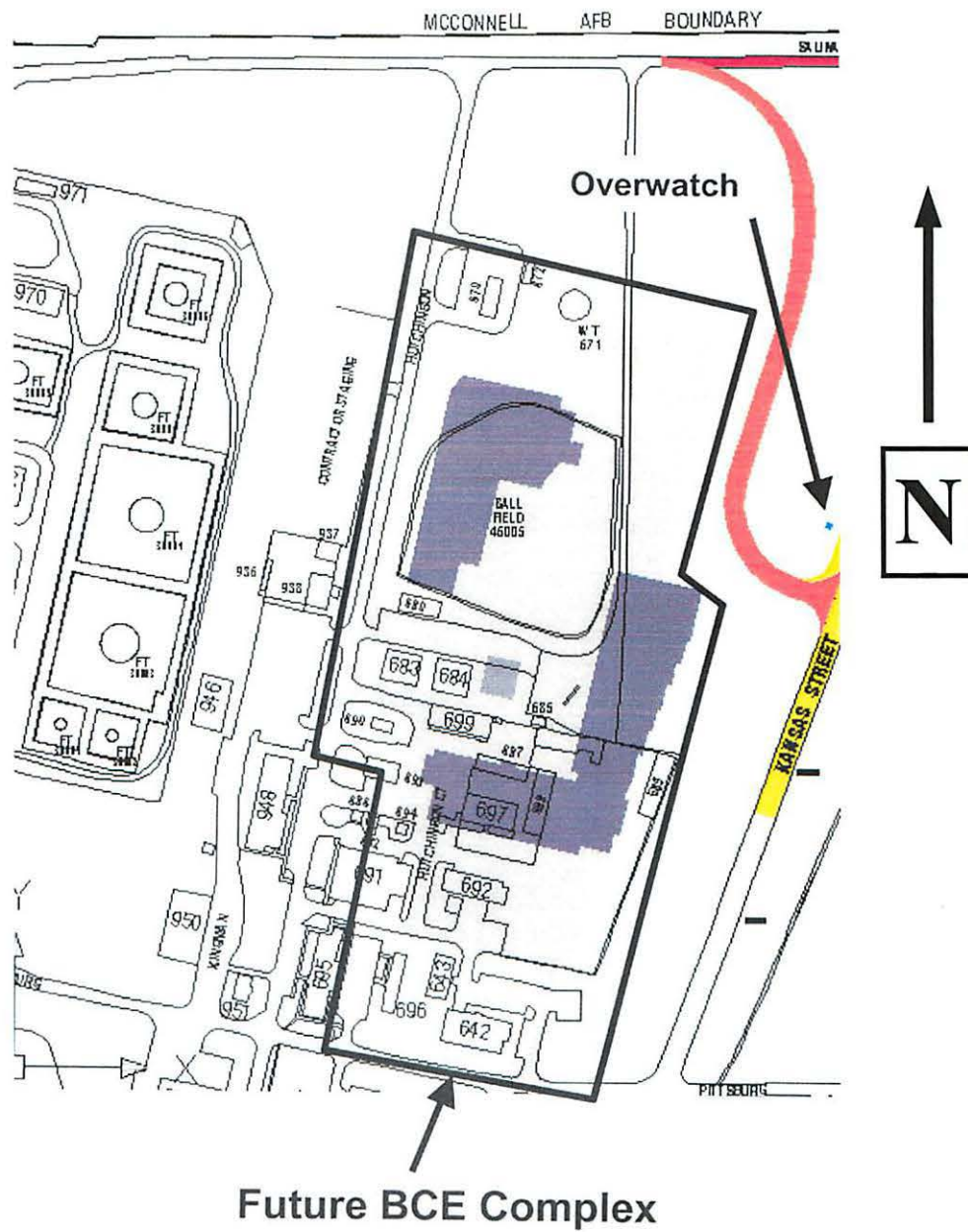
MAP 5
MCCONNELL AFB
WETLANDS LOCATION MAP



APPROXIMATE SCALE IS 1 INCH = 390 FEET

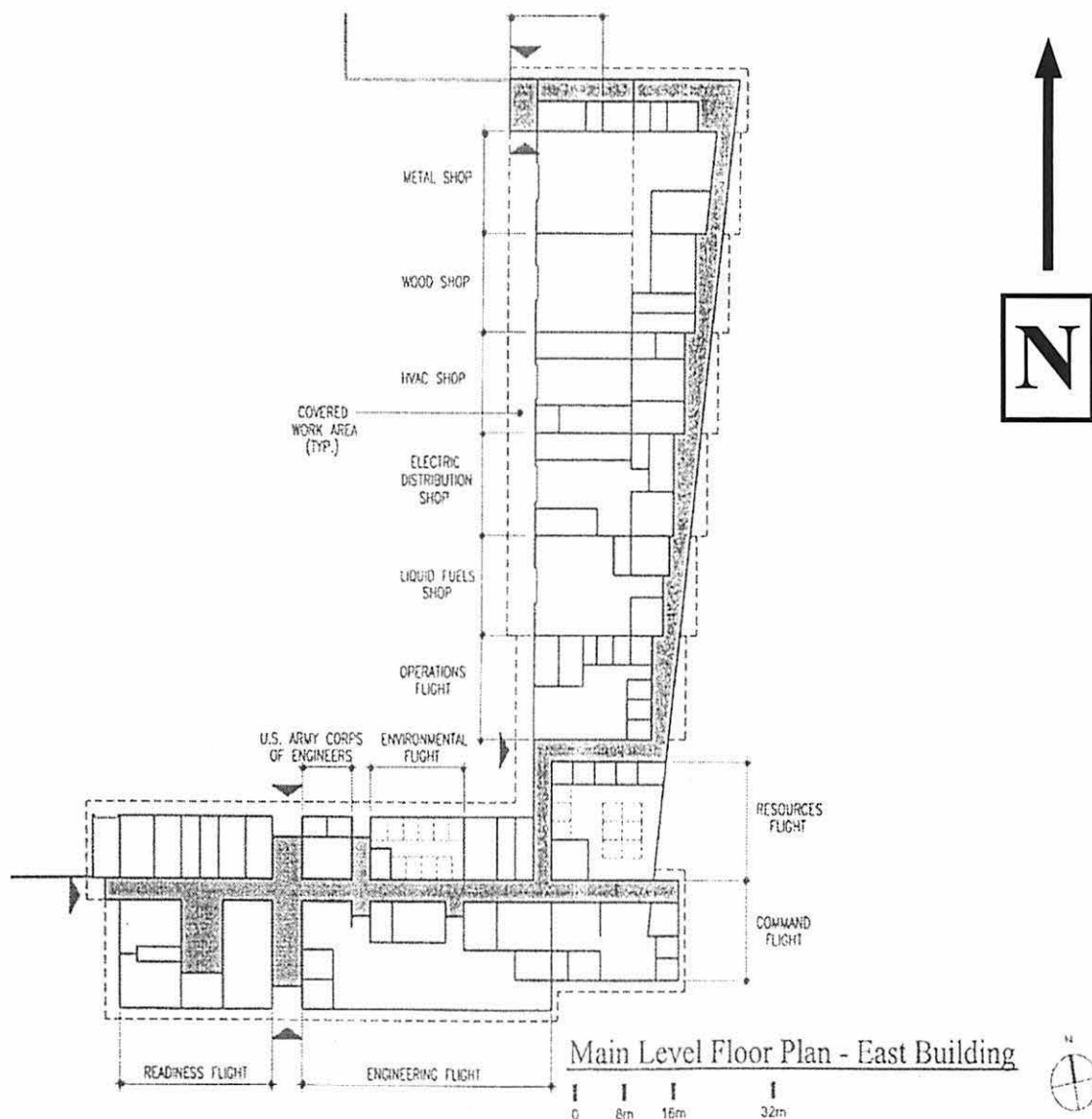
ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

FIGURE 1
BUILDING LOCATIONS



ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

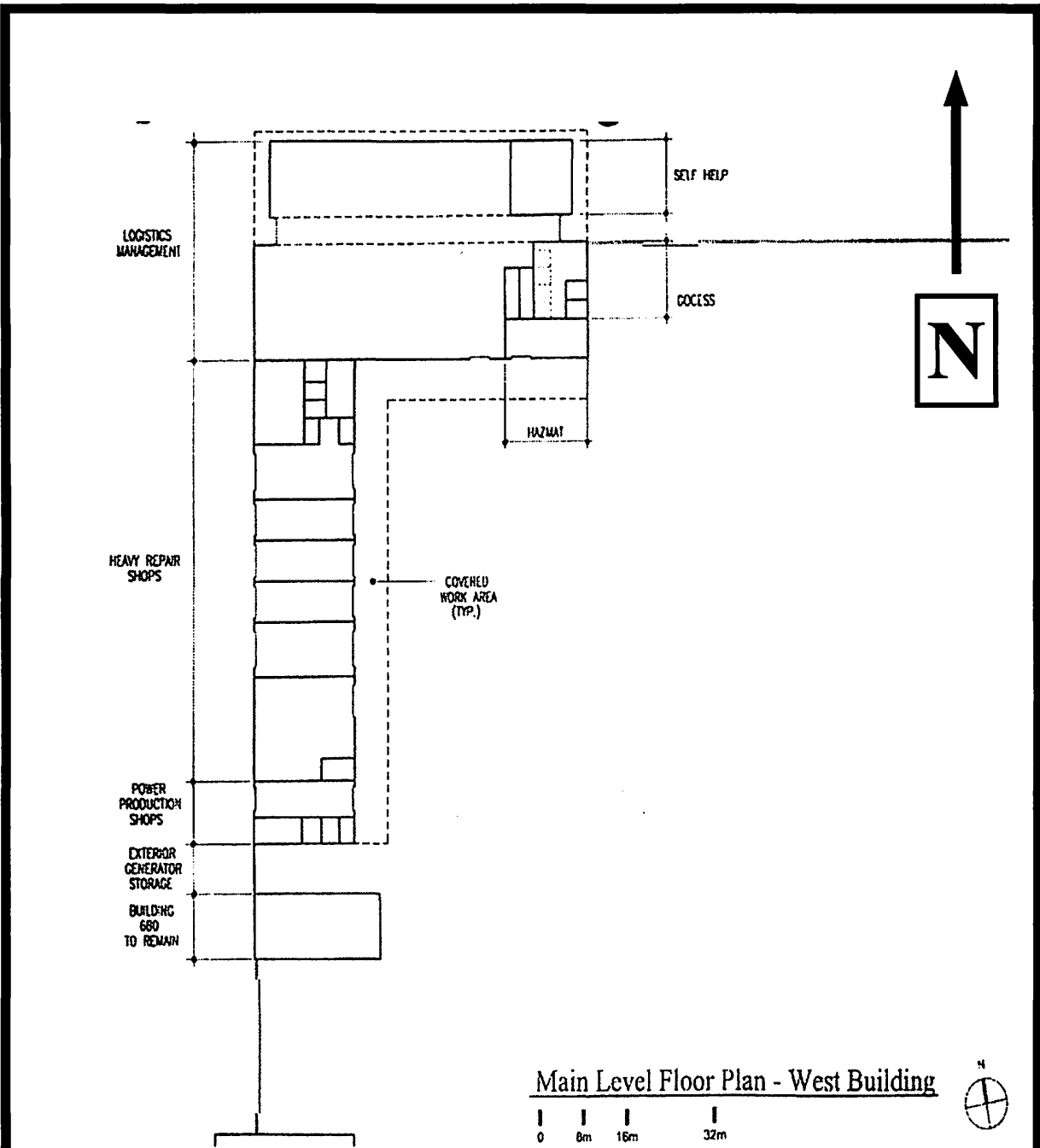
FIGURE 2
SITE AND STREET LOCATIONS



APPROXIMATE SCALE IS 1 INCH = 100 FEET

ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

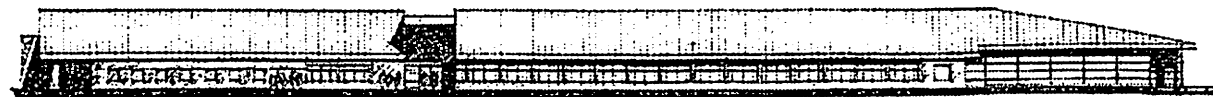
FIGURE 3
PROPOSED BUILDING FLOOR PLAN



APPROXIMATE SCALE IS 1 INCH = 90 FEET

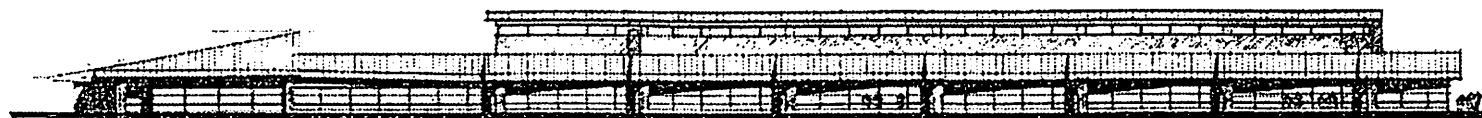
ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

FIGURE 4
PROPOSED BUILDING FLOOR PLAN



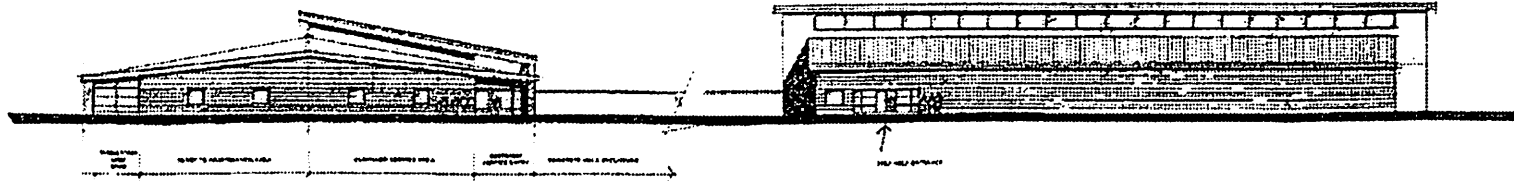
South Elevation - East Building

0 4m 8m 12m



East Elevation - East Building

0 4m 8m 12m



North Elevation - East Building

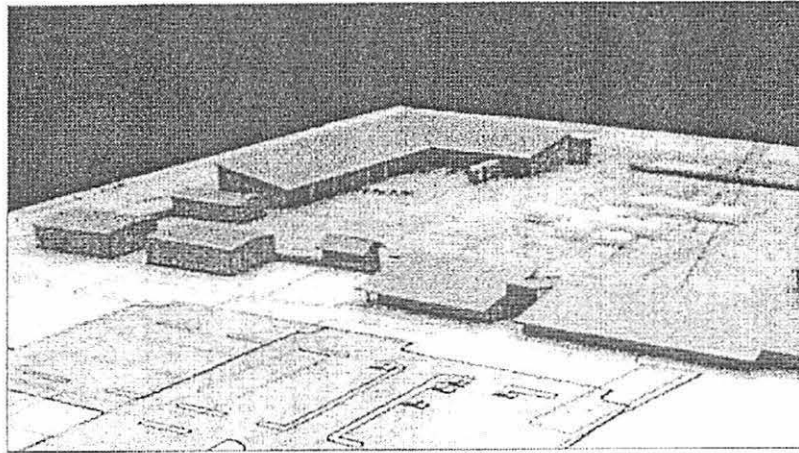
0 4m 8m 12m

North Elevation - West Building

0 4m 8m 12m

ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX

FIGURE 5
PROPOSED COMPLEX BUILDING DESIGN



Model Photo - Southeast Perspective

**ENVIRONMENTAL ASSESSMENT
FOR
CONSTRUCT BCE COMPLEX**

**FIGURE 6
PROPOSED COMPLEX BUILDING LAYOUT**

1. COMPONENT AIR FORCE AMC	FY 2004 MILITARY CONSTRUCTION PROJECT DATA	2. DATE June 2001
3. INSTALLATION AND LOCATION McCONNELL AIR FORCE BASE, KANSAS		
4. PROJECT TITLE CONSTRUCT BASE CIVIL ENGINEERING COMPLEX		5. PROJECT NUMBER PRQE 87-5022R7

AFI 32-1021 12 May 1994

CERTIFICATE OF COMPLIANCE
FOR CRITICAL PLANNING ACTIONS

I. INSTRUCTIONS: Place one X in the most appropriate response for each topic area to show current status of compliance. When responding to a statement requiring additional data, fill in the blank with appropriate information. If none of the printed statements are appropriate, add or attach an appropriate comment. For MILCON projects, the Civil Engineer Squadron Commander and installation commander must sign the certificate and submit it to the MAJCOM staff where it will be updated, retained and be readily available if required by HQ USAF.

II. PLANNING:

1. Environmental Impact Analysis Process (AFI 32-7061):

- ☐ Categorical exclusion number __ applies.
- ☐ Environmental Assessment under preparation. Expected completion date is: July 2002.
- ☐ Finding of No Significant Environmental Impact signed on: __.
- ☐ Draft Environmental Impact Statement (EIS) under preparation. Expected completion date is: __.
- ☐ Draft EIS filed on __ (date).
- ☐ Final EIS filed on __ (date).
- ☐ Record of Decision signed on __ (date).
- ☐ Foreign nation or protected global resource exemption number __ applies.
- ☐ Environmental study (or review underway) under preparation. Expected completion date is __.
- ☐ WO _____ has been signed with no Environmental Assessment required and no check off on items 2 through 7 and 9 through 16 will be required.
- ☐ Form 813 for PRQE _____ has been signed with no Environmental Assessment required.
- ☐ The existing project documents will be used as a check off on current Certificate of Compliance.

2. Wetlands (AFI 32-7064):

- ☒ Project is not sited in a wetland.
- ☐ Requirements of EO 11990 in progress. Estimated completion date is __.
- ☐ Requirements of EO 11990 completed on __ (date). Finding of "No Practicable Alternative" signed on __ (date).

3. Flood Plains (AFI 32-7064):

- ☒ Project is not sited in a 100-year flood plain.
- ☐ Requirements of EO 11988 in progress. Estimated completion date is __.
- ☐ Project is sited in a 100-year flood plain. Requirements of EO 11988 completed on __ (date). Finding of "No Practicable Alternative" signed __ (date).

4. Coastal Zone Management (AFI 32-7064):

- ☒ Project does not directly affect a state coastal zone.
- ☐ Consistency determination being developed. Estimated completion date is __.
- ☐ Consistency determination completed on __ (date).

** Enter P if action is in progress. Enter X if action is complete.

1. COMPONENT AIR FORCE AMC	FY 2004 MILITARY CONSTRUCTION PROJECT DATA	2. DATE June 2001
3. INSTALLATION AND LOCATION McCONNELL AIR FORCE BASE, KANSAS		
4. PROJECT TITLE CONSTRUCT BASE CIVIL ENGINEERING COMPLEX		5. PROJECT NUMBER PRQE 87-5022R7

AFI 32-1021 12 May 1994

CERTIFICATE OF COMPLIANCE
FOR CRITICAL PLANNING ACTIONS
(Continued)

5. Coastal Barrier Resources (AFI 32-7064):

- ☒ Project is not sited within the Coastal Barrier Resources System.
☐ Project excepted from the Coastal Barrier Resources Act (CBRA).
☐ Consultation with the Regional Director, United States Fish and Wildlife Service (USFWS), in progress.
 Estimated completion date is ____.
☐ Consultation with the Regional Director, USFWS, concluded ____ (date).

6. Threatened and Endangered Species (AFI 32-7064):

- ☒ Project has no potential for affecting threatened or endangered species or critical habitats.
☐ Based upon advice from USFWS or host nation liaison on ____ (date), threatened or endangered species in the vicinity of the project will not be affected.
☐ Consultation with USFWS underway in accordance with the Endangered Species Act.
☐ Formal consultation with the Regional Director, USFWS, completed on ____ (date).
☐ Biological Assessment is required. Estimated completion date is ____.
☐ Biological opinion issued by USFWS on ____ (date).

7. Cultural Resource Management (AFI 32-7065):

- ☐ Properties affected by project are addressed in a Programmatic Agreement that was fully executed with the State Historic Preservation Officer and the ACHP on ____ (date).
☐ Project area has not been surveyed for historic properties. Survey requirements are identified in the A-106 system and the estimated completion date is ____.
☐ Project area has been surveyed and no historic properties were identified; the State Historic Preservation Officer advised that the base may proceed with projects that do not involve historic properties.
☐ Survey identified historic properties but the project will have no effect on them; written concurrence by the State Historic Preservation Officer is dated ____.
☒ After consultation, State Historic Preservation Officer concurred that the project will have no adverse effect on historic properties. The Advisory Council on Historic Preservation concurred in writing with this determination on 10 December 1992.
☐ Project will have an adverse effect on historic properties. A memorandum of agreement (MOA) mitigating the adverse was executed on ____ (date).
☐ Estimated date to execute the MOA is ____ or no MOA was developed and the formal comments of the Council are being sought.
☐ Project will affect a site or property of interest to Native Americans.
☐ Appropriate Native American Tribe or Group contacted on ____ (date).

8. Interagency and Intergovernmental Coordination for Environmental Planning (AFI 32-7060):

- ☒ Coordination of proposed project with the state Single Point of Contact or other agencies is not required.
☐ Coordination with the state Single Point of Contact is in progress. Expected date of completion is ____ (date).
☐ Proposed project was coordinated with the state Single Point of Contact or other agencies on ____ (date). (Specify any other agencies) ____.

**** Enter P if action is in progress. Enter X if action is complete.**

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FOR CRITICAL PLANNING ACTIONS
(Continued)

9. Environmental Permits (AFIs 32-7040, 7041, 7042, 7044):

- ☐ No permits are required.
☐ No permits required, but regulatory agency notification required prior to construction (e.g. under-ground storage tank removals).
☒ The following permits are required prior to construction: (List the construction and operating permits).
1. NPDES Construction Permit (over one acre)

10. Potentially Regulated Substances (AFIs 32-1052, 7042):

a. Asbestos:

- ☐ not present;
☐ survey underway;
☒ present (Asbestos present in buildings to be demolished. Proper procedure to dispose of asbestos must be adhered to.)

b. Lead-Based Paint:

- ☒ not present;
☐ survey underway;
☐ present (Describe mitigation, or state why mitigation is not necessary)

c. Ozone Depleting Substance:

- ☒ not present;
☐ survey underway;
☐ present (Describe mitigation, or state why mitigation is not necessary)

d. Polychlorinated Biphenyls (PCBs):

- ☒ not present;
☐ survey underway;
☐ present (Describe mitigation, or state why mitigation is not necessary)

e. Radon:

- ☒ not present;
☐ survey underway;
☐ present (Describe mitigation, or state why mitigation is not necessary)

f. Other Known Hazardous or Toxic Substances and Pollutants: (e.g. contaminated soils)

- ☒ not present;
☐ survey underway;
☐ present (Describe mitigation, or state why mitigation is not necessary)

11. Radon at New Construction Sites:

- ☒ Not present;
☐ Present

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(Continued)

12. Installation Restoration Program (IRP):
☒ Facility is not sited on or near an IRP site.
☐ Facility is sited near an IRP site. Approximately feet away.
☐ Facility is on an IRP site.
☐ A request for waiver was submitted to MAJCOM on (date).
☐ The site is projected to be remediated and closed out on (date), prior to commencement of construction activities.
☐ The site was remediated and closed out on
☐ The nature of the site contamination does not preclude the type of construction activity proposed.
☐ There is a Compliance Agreement associated with this site.
☐ A Remedial Investigation Feasibility Study was completed on (date) to accurately delineate the aerial extent of the contamination.

13. Air Pollutants (AFI 32-7040):
☒ Will not be generated by the operation or construction of this facility.
☐ Will be generated by the operation or construction of this facility. Describe type and amount of substance expected to be generated, existing control systems, and the need for additional controls. .
☐ Conformity determination not required.
☐ Conformity determination required.

14. Solid and Hazardous Wastes (AFI 32-7042, 32-7080):
☒ Facility will not be used for managing solid or hazardous wastes.
☐ Facility will be for managing solid or hazardous wastes.

15. Underground Storage Tanks (AFI 32-7044): (Check all that apply)
☒ No underground storage tanks are involved.
☐ New underground storage tanks will be installed.
☐ Existing tanks on the project site will be removed. Ensure regulatory agency has been notified.
☐ Contamination exists.
☐ Contamination does not exist.
☐ Contamination unknown.
☐ Existing tanks on the project site will be retained.
☐ Contamination exists.
☐ Contamination does not exist.
☐ Contamination unknown.

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FOR CRITICAL PLANNING ACTIONS
(Continued)

16. Air Installation Compatible Use Zone (AFI 32-7063):
☒ Facility is sited in compliance with Air Installation Compatible Use Zone Study. No noise level reduction is required.
☐ Facility is sited in compliance with Air Installation Compatible Use Zone Study. Noise level reduction of _____ will be provided in design and construction.
☐ Noise waiver request is being processed.
☐ Noise waiver has been granted.
17. Base Comprehensive Plan (AFI 32-7062):
☒ Facility is sited in a compatible land use category.
☐ Facility is not sited in a compatible land use category for the following reason: ____.
18. Airfield Clearance Criteria (AFI 32-1026):
☒ Facility is in compliance with airfield clearance criteria, including clear zone, accident potential zones and airfield airspace (height obstruction) criteria.
☐ A request for waiver to airfield/airspace clearance criteria is being prepared. Expected completion date is ____.
☐ A temporary waiver for construction activity in the airfield vicinity was approved on __ (date).
☐ A permanent waiver of airfield/airspace clearance criteria was obtained on __ (date).
19. Air Space Use:
☒ Project does not affect air space use and does not require submittal to Regional Administrator, FAA.
☐ Project sent to Regional FAA on __ (date).
20. Explosives Quantity/Distance Siting and Safety Clearance Criteria:
a. Projects involving munitions storage and explosives related facilities.
☐ Project is not affected by Q/D criteria.
☐ A request for waiver is under preparation.
☐ Expected completion date is ____.
☐ Request to waiver safety criteria sent to MAJCOM on __ (date).
☐ Explosive siting and safety approval obtained on __ (date).
b. Projects not involving explosives.
☒ Project is not within the Q/D Clear Zone of any existing or proposed explosive-related facility.
☐ A request for waiver is under preparation. Expected completion date is ____.
☐ Exemption required and granted on __ (date).


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AFI 32-1021 12 May 1994

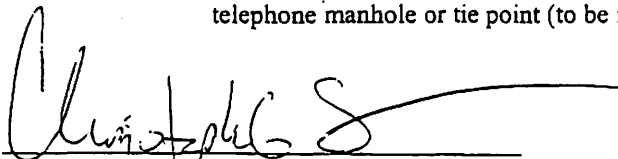
CERTIFICATE OF COMPLIANCE
FOR CRITICAL PLANNING ACTIONS
(Continued)

21. Air Base Survivability, Conventional Hardening, Chemical Protection Levels and Priorities, Camouflage, Concealment and Deception:
☒ Project does not affect airbase operability.
☐ Facility is sited or constructed in compliance with criteria contained in WMP-1.
☐ Waiver or exemption required; request submitted to MAJCOM Civil Engineering Readiness Office, in accordance with WMP-1.
☐ Waiver or exemption granted on __ (date).
22. Allowance for Physically Handicapped:
☒ Project provides all design features for handicapped.
☐ Project provides access and limited features.
☐ Project provides access but no other features.
☐ Design features for handicapped are not required.
☐ Design features will not be provided for the following reason: __.
23. Real Estate Requirement (AFI 32-9001):
☒ Project does not require acquisition of real estate interest.
☐ Project requires acquisition of a real estate interest over \$200,000.
☐ Land interest is to be acquired through minor land authority.
☐ Other (explain): __.
24. Facility Security:
☐ Threat assessment performed by OSI.
☒ Crime Prevention through Environmental Design methods to be incorporated into design if warranted (see local Security Police).
25. Excess Space:
☒ Excess space is not available to satisfy the requirement.
26. Temporary Facilities:
☐ Temporary facilities are required for this project and will be demolished upon completion.
☒ Temporary facilities are not required for this project.
27. Additional comments attached.
 I concur with the above statements.


 CHARLES G. EMMETTE, Lt Col, USAF
 Base Civil Engineer (date)


 RONALD R. LADNIER, Colonel, USAF
 Installation Commander (date)

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<p>Addendum to Certificate of Compliance</p> <p>Certification of Communications Considerations</p> <p>This project has been coordinated with the base/installation Communications Officer to ensure necessary provisions for communications are included in the overall facility requirements. Examples of common communications cables, raceways and ducts for cable, conduit for secure communications, wiring, pull strings etc.</p> <p><input type="checkbox"/> a. Project does not require communications support provisions.</p> <p><input checked="" type="checkbox"/> b. Project requires communications support provisions which are included in the overall facility requirements.</p> <p><input checked="" type="checkbox"/> c. End user(s) of the facility must provide their communications requirements to both the contractor and to 22 CS/SCX, (at least 60 days lead time will be required by the Communications Squadron to ensure requirements are installed and operational.) Use AF Form 3215 to identify requirements.</p> <p><input checked="" type="checkbox"/> d. Primary contractor will provide adequate conduit, raceways, wiring (telephone plus level 5 twisted pair), pull strings, etc., for identified communications requirements.</p> <p><input checked="" type="checkbox"/> e. Primary contractors will provide ducting and associated communications cable/wiring to nearest telephone manhole or tie point (to be identified by 22 CS/SCX).</p> <p></p> <p>MARCIA R. MEEKS-EURE, Major, USAF Installation Communications Officer</p>		

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APPENDIX B HYDROLOGY AND WETLANDS STUDY

Fax Sheet

HDR

Date 7-04-01

Number of Pages (Includes cover page) 6

Message To

Name	<u>Cole Knight</u>	Telecopy number called	<u>316-759-6496</u>
Firm	<u>MAFB</u>		
City	<u>Wichita</u>	State	<u>KS</u>

If you do not receive all the pages, please call 402-399-1098 as soon as possible.

From

Name	<u>Craig Osborn</u>	Job Number	
Telephone	<u>339-1273</u>	Department	

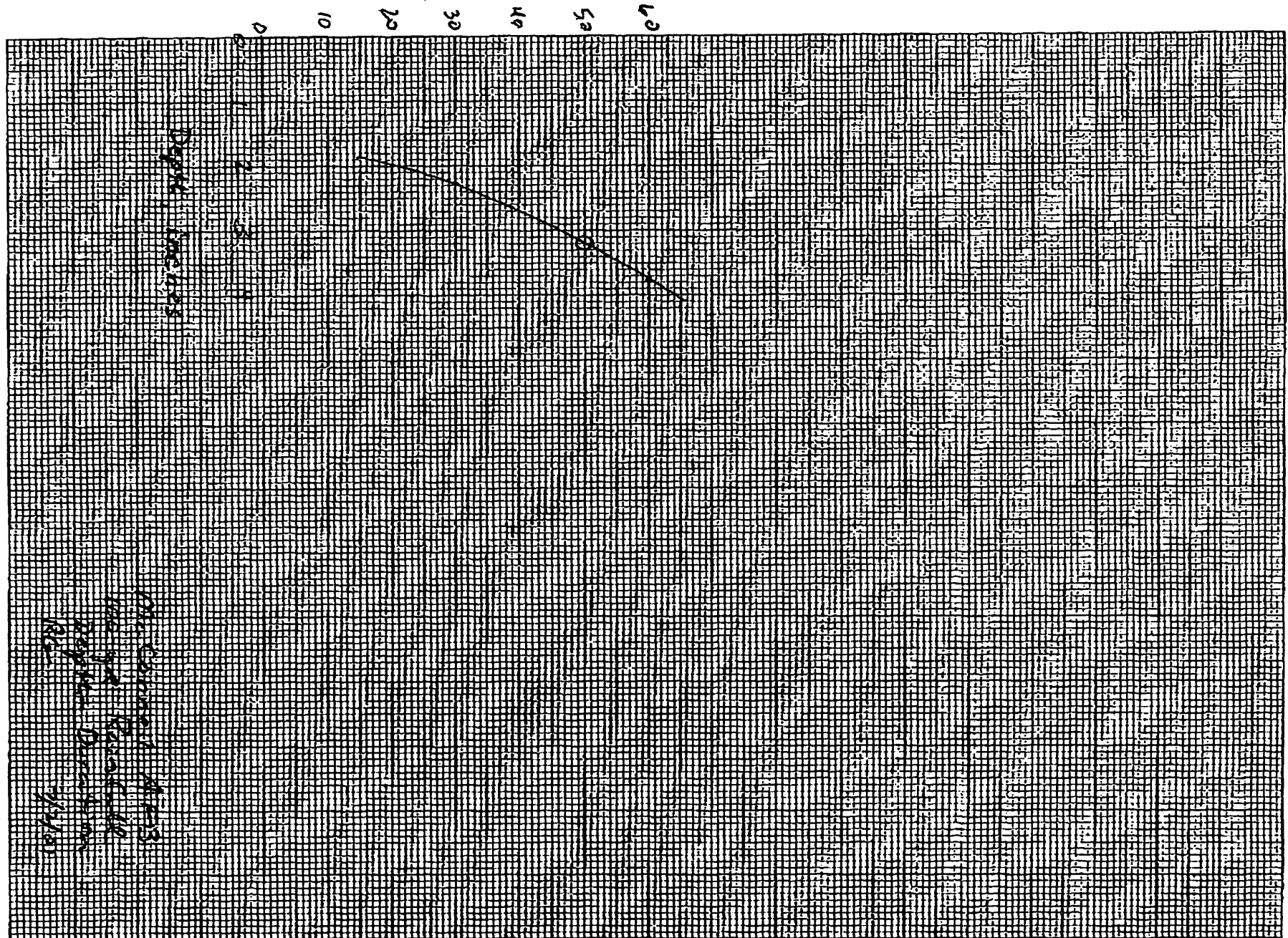
Estimates indicate Flow increase from 55 cfs to 82 cfs
for a 100 year event for drainage area 1-15.

HDR Engineering, Inc.

8404 Indian Hills Drive
Omaha, Nebraska
68114-4049

Telephone
402-399-1000
Fax
402-399-1111

Time, minutes



On common axis
use of horizontal
depth direction
4/1/61

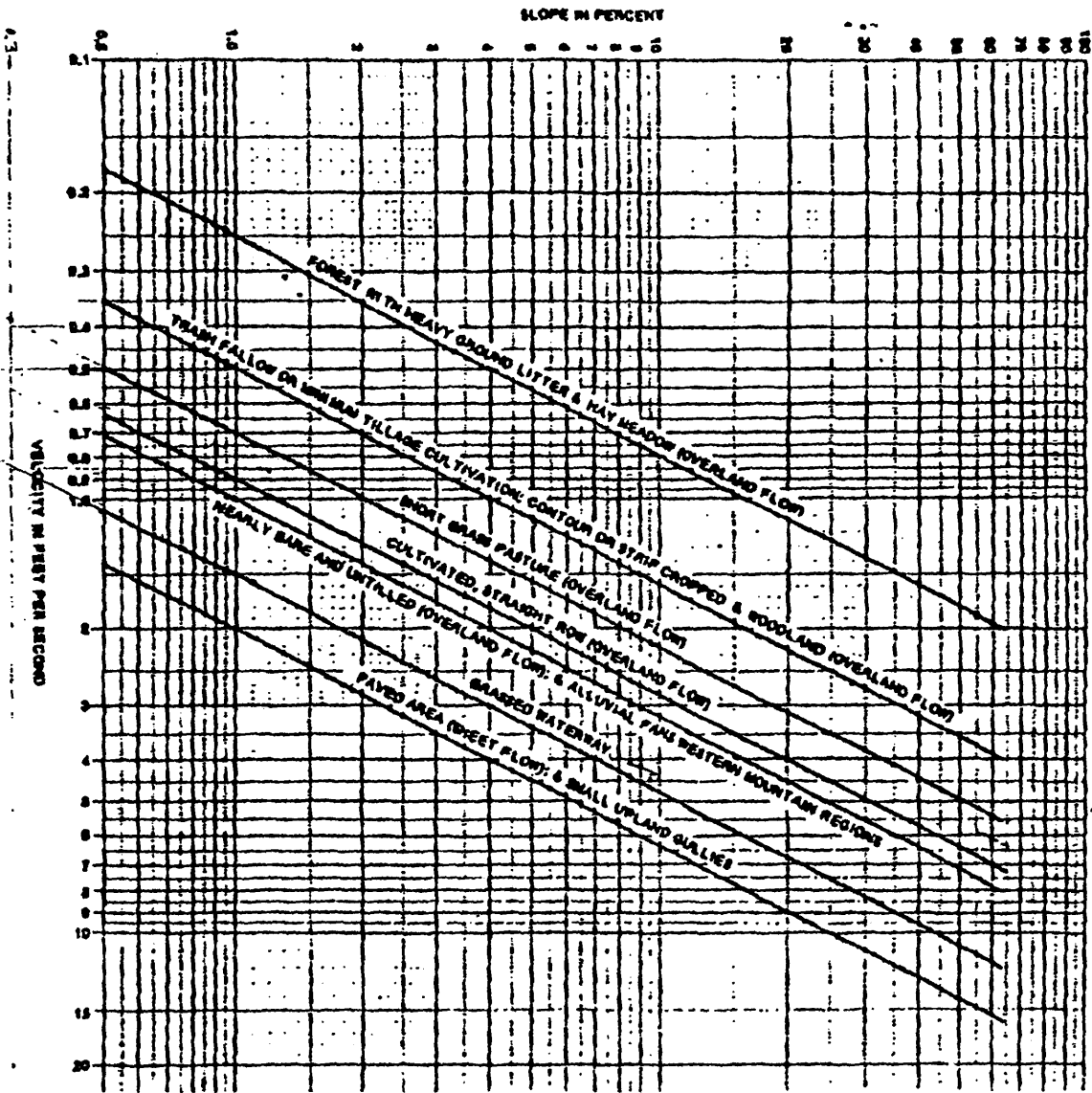


Figure 11-12. Velocities for SCS upland method of estimating t_c

0.3

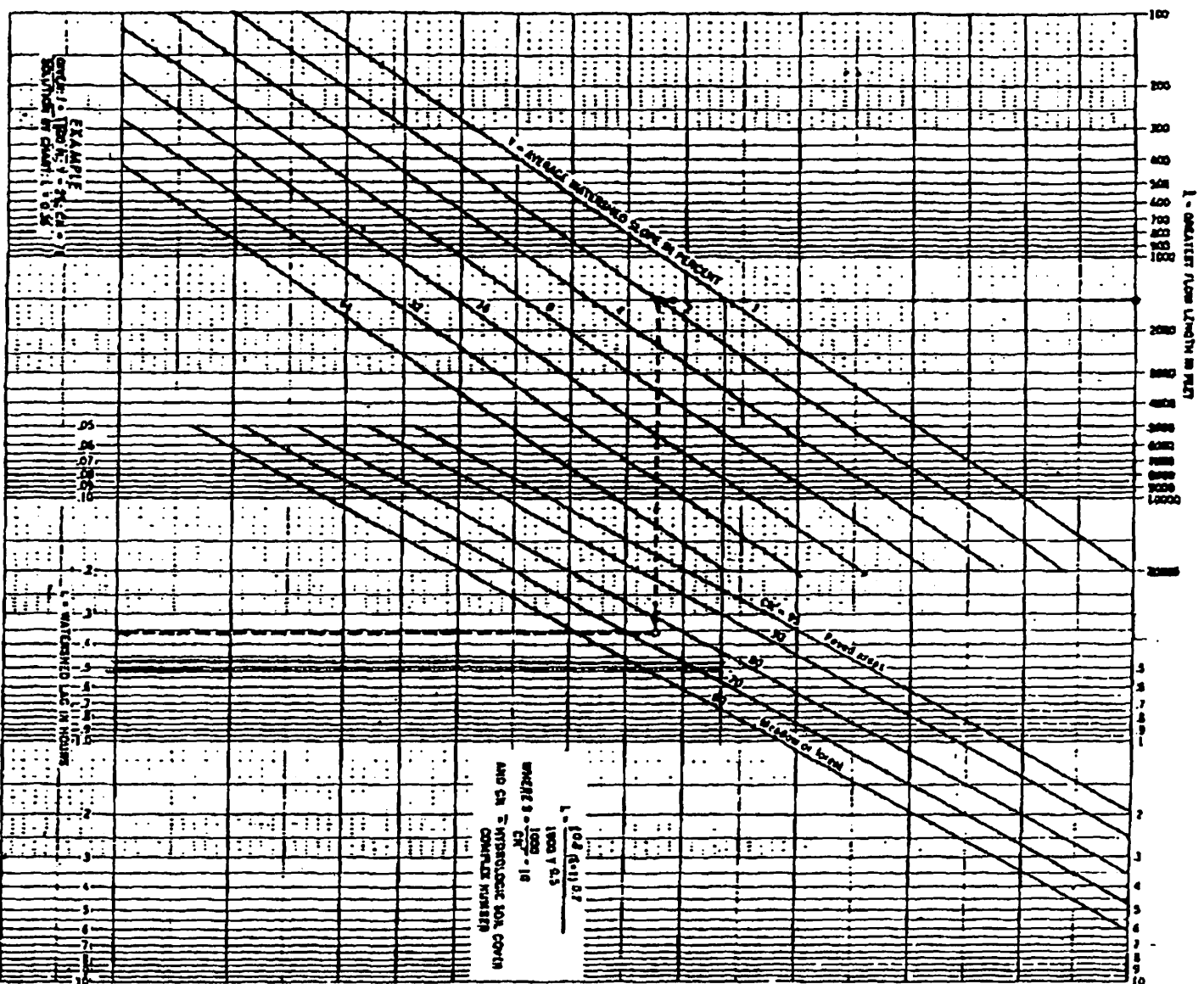


Figure 11-13 SCS curve number method for estimating lag (L)

HDR Computation

HDR

Project	Computed 126	Date 7-2-01
Subject	Checked	Date
Task	Sheet 2	Of

C

Let $C_{pervious} = 0.15$, sandy soil $< 2\%$
 $C_{imper} = 1.0$

$$\text{then } C_{ex} = \frac{8}{51}(1) + \frac{43}{51}(0.15) = 0.28$$

$$C_{prop} = \frac{16}{51}(1) + \frac{35}{51}(0.15) = 0.42$$

Then

$$Q_{exist} = (0.28)(3.84)(51) = 55 \text{ cfs}$$

$$Q_{proposed} = (0.42)(3.84)(51) = 82 \text{ cfs}$$

HDR Computation

HDR

Project	McConnell AFB	Computed	RLG	Date	7/2/01
Subject	Effect of incr. imperv on Q_p	Checked		Date	
Task		Sheet	1	Of	759-6496

Determine effect of increasing imperviousness of 51-acre basin from 8 acres to 16 acres, on 100-year peak discharge. Use Rational Formula.

t_c Based on available mapping, drainage path is approx. 1500'. Assume $v = 60 \text{ fpm}$ (path very mild sloping, ill-defined & grassed).

Then $t_c = 1500 \text{ ft} / 60 \text{ fpm} = 25 \text{ min}$ (appears too quick)

check SCS curve number method for t_c
let $CN = 70$ pervious (sandy silt, grassed)
 $CN = 95$ impervious

$$\text{then } CN_{eq} = \frac{8}{51} (95) + \frac{43}{51} (70) = 74$$

$$CN_{pop} = \frac{14}{51} (95) + \frac{35}{51} (70) = 78$$

assume $y = 1.70$

$$\text{then } t_{24} = 0.46 \text{ hr}$$

$$t_{48} = 0.5 \text{ hr}$$

assume $t_c = t_{48} / 0.6$ then $t_c = 0.5 / 0.6 = 0.83$ or 50 min

use Hydro mat 35

$$\text{eg. 8 } 30\text{-min} = 0.49 (60\text{-min value}) + 0.51 (15\text{-min value})$$

$$\text{from Fig. 9 } 100\text{-yr } 15\text{-min} = 1.85''$$

$$\text{from Fig. 5 } 100\text{-yr } 60\text{-min} = 3.75''$$

$$\text{then } 30\text{-min} = 0.49 (3.75) + 0.51 (1.85) = 2.28$$

from plot of 15-, 30-, & 60-min values,
100-yr 50-min depth = 3.2" or $i = \frac{3.2}{50/60} = 3.84 \text{ in/hr}$

**UNITED STATES AIR FORCE
McCONNELL AIR FORCE BASE
WETLAND DELINEATION REPORT**

Prepared for:
United States Air Force
McConnell Air Force Base
Wichita, KS 67221

February 2001

Prepared by:



HDR Engineering, Inc.
8404 Indian Hills Drive
Omaha, NE 68114-4049

HDR ENGINEERING INC.
HDR

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Figure 3 – Wetland Area A
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PROJECT LOCATION

The project area is located in Sections 1, 12, 13, and 24; Township 28 South; Range 1 East; and in Sections 6, 5, 7, and 18; Township 28 South; and Range 2 East in Sedgwick County, Kansas (Figure 1). The project area is situated approximately 5 miles southeast of downtown Wichita, Kansas.

PROJECT DESCRIPTION

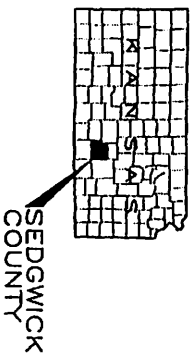
HDR Engineering, Inc. (HDR), 8404 Indian Hills Dr, Omaha, Nebraska 68114, prepared this Wetland Delineation Report for the U.S. Air Force for the purpose of delineating potential jurisdictional waters of the United States including wetlands. It was prepared under contract with the Omaha District U.S. Army Corps of Engineers, Contract No. DACW-45-97-D-0007.

METHODOLOGY

Prior to an on-site investigation, preliminary data gathering for the project area was conducted. Information used included the Sedgwick County, Kansas Soil Survey, Sedgwick County List of Hydric Soils, National Wetland Inventory map, USGS 7.5 minute topographical maps (Derby, Wichita East, Andover, and Rose Hill, KS), aerial photographs, and 2-foot interval contours. On-site survey locations were determined based on an examination of the data sources listed above and under the guidance of Mr. Jay Zimmerman, Environmental Flight Engineer. The on-site delineation was performed on April 10-14 and 25-26 in accordance with the U.S. Army Corps of Engineers-*1987 Manual for Delineating Wetlands* by HDR Engineering Inc. The *National List of Plant Species That Occur in Wetlands: Central Plains (Region 5)* was used to determine wetland vegetation indicator status for vegetation present in the project area.

Wetlands and adjacent upland areas were identified and classified by vegetation, hydrology, and soils in accordance with the *1987 Manual*. The wetland area boundaries were flagged and surveyed by Carlson Surveying on June 1-2 using Global Positioning System (GPS). The location and size of all the wetland areas is given on the Base Map (Figure 2). Not every sample point is described in the text of this report. Please refer to the Routine Wetland Determination Dataforms (Appendix B) for information on other wetlands investigated on the base.

SOURCE: USGS 7.5 MIN. QUADS, DERBY, WICHITA EAST,
ANDOVER, AND ROSE HILL, KANS.



MCCONNELL AIR FORCE BASE
Wichita, Kansas



HDR
HDR Engineering, Inc.

WETLAND EVALUATION

TITLE

SITE LOCATION MAP

DATE

Feb. 2001

FIGURE NO.

1

Figure 2 – Base Map (33' x 40' Color Map)

WETLAND DELINEATIONS

Wetland Area A

Wetland Area A is a 1.62-acre complex consisting of three depressional areas with emergent vegetation. The area is generally dominated by *Eleocharis erythropoda* (bald spike rush) which is an OBL species in Region 5. Other dominant species characteristic of the area include *Carex vulpinodea* (fox sedge), *Cyperus esculentus* (yellow nut sedge), and *Juncus torreyi* (Torrey's rush). The topography indicates three low depressional areas that impound precipitation. Wetland A is contained within one mapped soil type: Urban land-Irwin complex, 1-3% slopes. This wetland complex is mapped on the National Wetland Inventory (NWI).

Three sample points were performed to characterize the wetland area and results were recorded on wetland dataforms (Appendix A). The approximate locations of the sample points are noted on Figure 3.

Sample Point 1 characterizes the first depressional area north of the training area. *Eleocharis erythropoda* (bald spike rush), *Carex vulpinodea* (fox sedge), *Cyperus esculentus* (yellow nut sedge), and *Juncus torreyi* (Torrey's rush) were dominant species in the herbaceous stratum. *E. erythropoda* and *C. vulpinodea* have OBL regional indicators, while *C. esculentus* and *J. torreyi* have FACW indicators. The shrub stratum was represented by *Ulmus pumila* (Siberian elm), the sole shrub species in the vicinity. The *U. pumila* were observed on a small patch of higher ground in the center of the depressional area. *U. pumila* has an UPL indicator. Much of the site was covered by 2-4 inches of surface water, and wetland hydrology was supported by primary indicators of inundation and saturation in the upper 12 inches and by the secondary indicator of a positive FAC-Neutral Test (4:1). The soil pit was dug adjacent to the inundated area. The soil texture was silty clay from 0-6 inches, and clay from 6-18 inches. Bright mottles and concretions were observed throughout the soil profile. The mapped soil type of Urban land – Irwin complex described in the Sedgwick County Soil Survey was confirmed. Although this soil type is not listed on the Local Hydric Soils List, the field indicators of low-chroma colors with mottles and the presence of concretions support the soil in this location being hydric. This location is an emergent wetland. Photo 1 (Appendix C) was taken facing NW from Sample Point 1.

Sample Point 2 was located in the second depressional area north of the training area. This location was dominated by *Juncus torreyi* (Torrey's rush), *Carex vulpinodea* (fox sedge), *Eleocharis erythropoda* (bald spike rush), and *Populus deltoides* (cottonwood). These species are FACW, OBL, OBL, and FAC respectively. Wetland hydrology was present based on inundation, saturation, and FAC-neutral indicators. The soil profile showed hydric soil indicators of gleyed (5 GY 7/1) and low-chroma (10 YR 3/2 with mottles) colors. The observed matrix colors do not match the mapped type Urban land – Irwin complex as described in the Sedgwick Soil Survey. This area was determined to be a wetland with emergent vegetation.

The northern-most depressional area in this wetland complex had vegetation very similar to that at Sample Point 2. Additionally, *Typha latifolia* (cattails) and *Scirpus validus* (soft-stemmed

bulrush) were common species in this location, both of which have OBL indicators. This area was inundated and the soil was obviously saturated to the surface.

Wetland Area B

Wetland Area B is a 0.76-acre emergent wetland complex west of the pond near the aircraft display at the northwest corner of the base. This area appears as a linear wetland on the NWI map. This wetland complex consists of a drainageway that runs from the pond west to Outfall 8 as well as a small hillside wetland to the north of the drainageway. After the construction of the pond near the aircraft display impacted a wetland, this area was set aside and protected at the direction of U.S. Army Corps of Engineers. Three sample points were taken at this complex (Figure 4).

Sample Point 12 characterizes the drainageway just west of the pond. The dominant species at this location are *Populus deltoides* (cottonwoods) and *Salix nigra* (black willow) in the tree stratum, *Salix nigra* (black willow) and *Salix exigua* (sandbar willow) in the shrub stratum, and *Typha latifolia* (cattails) in the herbaceous stratum. *P. deltoides* has a FAC indicator, while the rest of the dominant species at this sample point have OBL indicators. This area meets the criteria for hydrology on the basis of inundation, saturation, and passing the FAC-neutral test. The pit dug for this location showed soil with low-chroma colors (10 YR 3/1 with mottles). Photo 2 (Appendix C) shows Sample Point 12.

Sample Point 13 was evaluated for the small hillside wetland to the north of the drainageway. Dominant species were *Typha latifolia* (cattails) and *Scirpus validus* (soft-stemmed bulrush). Shallow standing water was present at this location despite being on a gradual slope. The soil pit showed gleyed (5 GY 6/1) and low-chroma (10 YR 3/1 with mottles) colors, and the soil was saturated to the surface.

Further west the water from the drainageway at Sample Point 12 is carried through a short culvert. West of this culvert is the location of Sample Point 14. The dominant vegetation in the herbaceous stratum is *Typha latifolia* (cattails), and *Salix exigua* (sandbar willow) in the shrub stratum. This area meets the criteria for hydrology because of inundation, saturated soils, and passing the FAC-neutral test. The soil profile showed low-chroma colors (5 Y 3/2 with bright mottles) and a small amount of gleyed soil (5 GY 6/1).

Wetland Area C

Wetland Area C is a 0.66-acre drainageway in the southwest corner of the base just east of a stockpile for excavated material (Appendix C, Photo 3). This area is of particular interest due to the U.S. Army Corps of Engineers authorizing the selective cutting of trees in this wetland area, while prohibiting filling of the area. Wetland Area C is described in the dataform for Sample Point 30. Figure 5 shows the location of Wetland Area C.

Dominant vegetation includes *Salix exigua* (sandbar willow) and *Populus deltoides* (cottonwoods) in the shrub stratum, *Rumex crispus* (curly dock) in the herbaceous stratum, and *Vitis riparia* (riverbank grape) in the vine stratum. These species are OBL, FAC, FACW, and FACW- respectively. The shrub layer consists of new growth from stumps of trees that were cut

a few years ago. Wetland hydrology is supported by inundation, saturation, oxidized root channels, and a positive FAC-neutral test. The top 3 inches of the soil profile was muck (2.5 Y 3/2), 3-9 inches was a silty clay (10 YR 3/2), and from 9-18 inches the texture was a silty clay loam (10 YR 3/2). Prominent mottles were found throughout the soil profile. Wetland Area C has developed into a scrub/shrub wetland due to the selective cutting of larger trees (>3.0 inches diameter breast height) in this area and the subsequent revegetation of shrubs (>3.2 feet, <3.0 inches diameter breast height)

Wetland Area D

Wetland Area D is a series of emergent wetlands in the area of the runways and taxiways totaling 3.04 acres. Two representative sample points, Sample Points 31 and 32, were taken of Wetland Area D (Figures 6-1, 6-2, 6-3).

Sample Point 31 was taken at the major drainage ditch of the runways and taxiways (Appendix C, Photo 4). This 1.87-acre wetland begins and ends with large culverts and has moderately sloped banks. The area of wetland vegetation is therefore limited to a long, narrow strip adjacent to the channel. The slowly flowing water in this drainageway was about 1-18 inches deep. The dominant vegetation in the herbaceous stratum included *Eleocharis erythropoda* (bald spike rush), *Typha latifolia* (cattails), and *Cyperus esculentus* (yellow nut sedge), all OBL species. In the shrub stratum dominant vegetation was comprised of *Salix exigua* and young *Populus deltoides*, OBL and FAC respectively. Wetland hydrology indicators present were inundation, saturation in the upper 12 inches, and the FAC-neutral test. Hydric soil indicators present were low-chroma colors (10 YR 3/1) and some gleying (5 GY 6/1).

Sample Point 32 represents the majority of the small wetlands found at this location. This area is a 0.05-acre emergent wetland where water ponds long enough to support wetland soils and plants. *Eleocharis erythropoda* (bald spike rush), *Typha latifolia* (cattails), and *Bromus ciliatus* (fringed brome) were the dominant species of the area. Like Sample Point 31, wetland hydrology is supported by inundation, saturation, and the FAC-neutral test. Brown concretions, or soft masses of iron and manganese, were observed in the soil profile, as well as low-chroma colors (10 YR 3/1 and 10 YR 3/2 with mottles). The total area of these small emergent wetlands at this area is 1.17 acres.

Wetland Area E

Wetland Area E is a 0.48-acre emergent wetland in a drainage ditch on the southeast corner of base property (Appendix C, Photo 5). This area is slightly larger than other linear wetlands on the base, and the plant community at this location is more diverse than most of the other drainageways. Sample Point 34 characterizes this location (Figure 5).

The vegetation at Sample Point 34 is dominated by *Populus deltoides* (cottonwoods) and *Salix exigua* (sandbar willow) in the shrub layer; and *Cyperus esculentus* (yellow nut sedge), *Carex vulpinodea* (fox sedge), and *Festuca rubra* (red fescue) in the herbaceous layer. *P. deltoides* and *F. rubra* have FAC indicators, while *S. exigua*, *C. esculentus*, and *C. vulpinodea* are OBL species. The *F. rubra* was located on the very upper edge of the wetland vegetation. Hydrology at Sample Point 34 supported with primary indicators of inundation with up to 4 inches of

surface water in the channel and soil saturation at the surface. In addition, the area passed the FAC-neutral test, a secondary indicator. This area is mapped as Urban land – Farnum complex, 0-3% slopes in the Sedgwick County Soil Survey, however, this mapped type was not confirmed. The soil displays the hydric soil indicator of low-chroma colors (10 YR 3/1 with prominent mottles).

Wetland Area F

Wetland Area F is a 8.24-acre forested wetland complex along the banks of the McConnell Creek south of 47th Street. Six sample points were taken to determine the forested wetland boundaries (Figure 5). Two of these, Sample Points 20 and 22, were determined to be non-wetland, while Sample Points 18, 19, 21, and 23 were found to be within a wetland area.

Sample Point 18 is a shallow drainageway leading to the creek. A road recently constructed to provide access to build a new fence on the west side of base property may block water from entering this area in the future. The vegetation is dominated by mature *Ulmus americana* (American elm), a FAC species. No herbaceous stratum was observed beneath the tree stratum. The bare ground was due to standing water. Water marks, drift lines, and sediment deposits were observed on the trees at this location. The observed profile didn't match the mapped Milan loam, but did meet the low-chroma colors hydric soils indicator with a matrix of 10 YR 3/1 and mottles.

Sample Point 19 is located about 20 feet from the edge of the creek bank (Appendix C, Photo 6). *Ulmus americana* (American elm) is the dominant species of the tree stratum, and *Carex vulpinodea* (fox sedge) and *Bromus ciliatus* (fringed brome) are dominant in the herbaceous stratum. These species have indicators of FAC, OBL, and FACW respectively. Many drift lines were observed against the trees, and this area passed the FAC-neutral test. Low-chroma colors (10 YR 3/1 with prominent mottles) were observed in the soil profile.

The drainageway leading from Outfall 3 runs south and eventually intersects the creek. Sample Point 20 was taken about 50 feet east of the channel of this drainageway. Dominant vegetation in the area included *Solidago canadensis* (Canada goldenrod), *Bromus inermis* (smooth brome), and *Rhus trilobata* (smooth sumac). These have indicators of FACU, UPL, and not indicated respectively. The only indicator of hydrology was oxidized root channels, a secondary indicator. Two or more secondary indicators are required to meet wetland hydrology. The soil profile exhibited low-chroma colors (10 YR 3/2 and 10 YR 3/1 with mottles). Hydric soils were determined to be present, but hydrophytic vegetation and wetland hydrology was lacking in this location. This area was determined to be non-wetland. The wetland boundary is closer to the channel of the drainageway than Sample Point 20.

Sample Point 21 was taken near where the drainageway running south from Outfall 2 meets the creek. Dominant species at this sample point included *Cornus drummondii* (rough-leaf dogwood) and *Maclura pomifera* (osage orange) in the shrub stratum, *Agrimonia gryposepala* (agrimony), *Bromus ciliatus* (fringed brome), *Carex vulpinodea* (fox sedge), and *Toxicodendron radicans* (poison ivy) in the herbaceous stratum, *Ulmus americana* (American elm) in the tree stratum, and *Vitis riparia* (riverbank grape) and *Toxicodendron radicans* (poison ivy) in the vine stratum. Of these dominant species, 66 percent are FAC or wetter. Wetland hydrology

indicators of water marks on the elms and water stained leaves were noted. The soil profile showed low-chroma colors (10 YR 3/1) down to 18 inches. However, this darker color does not match the mapped soil type.

Sample Point 22 is located at a slight depression east of the joining of the drainageway from Outfall 2 and McConnell Creek. This area is approximately 40 feet north the edge of the bank at the outside of the bend. *Toxicodendron radicans* (poison ivy) was a dominant species in the herbaceous and vine strata having taken over the understory almost completely. Poison ivy has a FACU indicator. *Populus deltoides* (cottonwoods) is the dominant tree and *Cornus drummondii* (rough-leaf dogwood) is the dominant shrub at this location. These are both FAC species. Water-stained leaves was the only sign of wetland hydrology, and this is a secondary indicator. The soil profile was quite dry, but exhibits low-chroma colors (10 YR 3/2 and 10 YR 4/2 with mottles). This area lacks wetland hydrology and hydrophytic vegetation and is not a wetland.

The north bank of the creek at the east base boundary is the location of Sample Point 23. Dominant vegetation in this area included *Cornus drummondii* (rough-leaf dogwood) and *Morus alba* (white mulberry) in the shrub stratum and *Populus deltoides* (cottonwoods) in the tree stratum. These three species have FAC indicators. *Toxicodendron radicans* (poison ivy), a FACU species, was the dominant herbaceous species, nearly covering the entire understory. Primary indicators of water marks and drift lines were observed. The soil profile exhibited low-chroma colors (10 YR 3/2 with mottles).

Other Wetland Areas

Many drainage ditches and intermittent streams on base property meet the three wetland criteria: vegetation, hydrology, and soils. Approximately 6.33 miles of linear wetlands occur on the base. These range in size from 2-feet wide for minor ditches to 30-feet wide for McConnell Creek. Vegetation common to many of these linear wetlands included *Eleocharis erythropoda* (bald spike rush), *Typha latifolia* (cattails), and *Carex vulpinodea* (fox sedge). The most common hydric soil indicator in these areas is low-chroma colors. Some soil profiles also contained gleying or concretions. Most of these streams were inundated and saturated in the upper 12 inches, and these drainageways usually passed the FAC-neutral test as well. Photo 7 (Appendix C), taken at Sample Point 38, shows McConnell Creek near Outfall 1. Photo 8 (Appendix C) of Sample Point 5 shows a typical drainage ditch on base property.

CONCLUSIONS

Wetland areas on base property totaled 14.8 acres, of which 3.04 acres are forested wetland and 11.76 acres are emergent wetlands. Additionally, 6.33 miles of McConnell Creek, streams, and ditches exhibited wetland characteristics. Per conversations with the Kansas City Corps of Engineers, most of these ditches would not be considered jurisdictional wetlands, however, the Corps would like to be contacted before any of these areas are impacted to verify their jurisdictional status.

**UNITED STATES AIR FORCE
McCONNELL AIR FORCE BASE
WETLAND DELINEATION REPORT**

**APPENDIX A
Wetland Maps**

**APPENDIX C
CULTURAL RESOURCES RECONNAISSANCE SURVEY**

ABSTRACT

A cultural resource survey of prehistoric and historic resources was conducted for McConnell Air Force Base by the Division of Partnerships and Outreach, National Park Service in 1994. The survey was part of the cultural resource baseline survey requested by Headquarters Air Mobility Command. The base encompasses 3,103 acres. The base has more than 220 industrial, administrative, and community buildings with approximately 589 housing units. The project included a review of previous cultural resources investigations, an archeological survey of approximately 260 acres of open areas on the main base and the entire 127 acres of southern Clear Zone, the inventory of six buildings built prior to 1947, and the identification of buildings and structures built between 1951 and 1955.

No archeological resources were identified within the boundary of the main base and military family housing area. No further Phase II archeological investigations are recommended for these areas. The main base and the adjoining housing area have been heavily disturbed from the construction of buildings, runways, streets, landfills, and underground utilities, as well as intensive landscaping activities over the past 60 to 70 years. On the southern Clear Zone, eight historical archeological sites were identified, documented and evaluated. None of the sites meet the criteria for eligibility for the National Register of Historic Places due to their recent age or to their heavily disturbed nature. No further Phase II archeological investigations are recommended for these sites in the Clear Zone.

During the inventory, documentation, and evaluation of the six buildings constructed prior to 1947, two (Facility Nos. 2 and 9) of the six buildings (Facility Nos. 2, 9, 15, 17, 1218, and 1219) related to the Wichita Municipal Airport have been recommended as eligible to the National Register of Historic Places as contributing properties to the Wichita Municipal Airport Historic District under Criteria A and C. The Wichita Municipal Airport Historic District also includes the Airport Terminal or Administration Building which is owned by the City of Wichita. Two of the six buildings (Facility Nos. 1218 and 1219) are associated with the Kansas Air National Guard and are recommended as eligible to the National Register of Historic Places under Criteria A and C. It is recommended that National Register of Historic Places district nomination for the eligible facilities be completed.

During the project, the National Park Service also conducted an architectural assessment of Air Force facilities built from the initial purchase of the base in 1951 through 1955. A total of 31 permanent facilities, 27 semi-permanent facilities, and 92 auxiliary/landscape facilities were identified. Twenty-five of

these facilities have been identified as disposal properties. is recommended that the buildings and structures identified from the base's Real Property Inventory records as permanent or semi-permanent facilities built between 1951 and 1956 not presently on the disposal list should be inventoried and evaluated. After the inventory and evaluations of these facilities, a Cultural Resource Management Plan should be completed for all eligible National Register of Historic Places properties found on McConnell Air Force Base. The Air Force should also develop a plan for the inventory and evaluation of all Cold War facilities located on the base.

APPENDIX D THREATENED AND ENDANGERED SPECIES SURVEY



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Kansas Field Office
315 Houston Street, Suite E
Manhattan, Kansas 66502-6172

October 25, 2001

Mr. Jon S. Hafker
Environmental Engineer
22nd Civil Engineering Squadron
53000 Hutchinson St. Suite 109
McConnell AFB, Kansas 67221-3617

Dear Mr. Hafker:

This is in response to your recent request for our review of the McConnell Air Force Base, Interim Integrated Natural Resources Management Plan (INRMP), Sedgwick County, Kansas. We understand a new contract has been issued, September 2001, to update this interim INRMP. The following comments are provided for your consideration.

General Comments

Overall this document provided a thorough assessment of the natural resources present on the McConnell Air Force Base, and the land use proposals appear suitable for the protection of the resources of concern. It is our assessment based on the small size and developed nature of the base, there is little habitat suitable for federally-listed species which occur in Kansas. Surveys for listed and candidate species conducted by the Kansas Biological Survey in 1994 and in 1999 failed to document these species on the facility.

Specific comments

Page 25, 1st paragraph. We believe nearly 90% of MAFB is improved or semi-improved, not 80% as stated.

Page 28, 2nd paragraph. This paragraph should be updated to incorporate information from the 10/29/1999 report for McConnell AFB by the State Biological Survey of Kansas.

Page 29, Section 5.4.1. The 1997 USDA study of vertebrate populations should appear as an addendum in you final document.

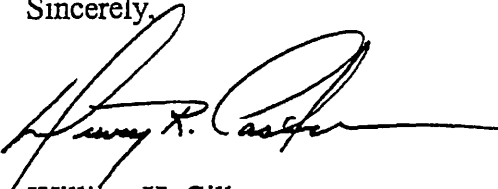
Page 33, Section 5.4.4 See comment for page 28.

Summary Comments

We agree that no regular occurrences of federally-listed or proposed threatened or endangered species occur on McConnell Air Force Base and there is no need for an endangered species management plan.

Thank you for the opportunity to comment on this interim Integrate Natural Resource Management Plan. If we can be of any assistance please call Mr. Dewey Caster, of my staff, at 785 539-3474 ext. 108.

Sincerely,


For: William H. Gill
Field Supervisor

cc: Morgan Elmer, INRMP Coordinator, RO, Denver, CO.

WHG\drc

APPENDIX E AICUZ STUDY



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 22D AIR REFUELING WING (AMC)
McCONNELL AIR FORCE BASE, KANSAS

14 OCT 1994

MEMORANDUM FOR AREA GOVERNMENTS

FROM: 22 ARW/CC

57837 Coffeyville Street, Suite 133

McConnell AFB KS 67221-3504

SUBJECT: Air Installation Compatible Use Zone (AICUZ) Study

1. This Air Installation Compatible Use Zone (AICUZ) Study for McConnell Air Force Base is an update of the original AICUZ Study released in 1981 and revised in 1987, 1991, and 1992. The update was initiated because of changes in the base mission, changes in the types of aircraft assigned to McConnell AFB, and improvements in noise mapping software. It is a reevaluation of aircraft noise and accident potential related to Air Force flying operations and is designed to aid in the development of local planning mechanisms which will protect public safety and health as well as preserve the operational capabilities of McConnell AFB.

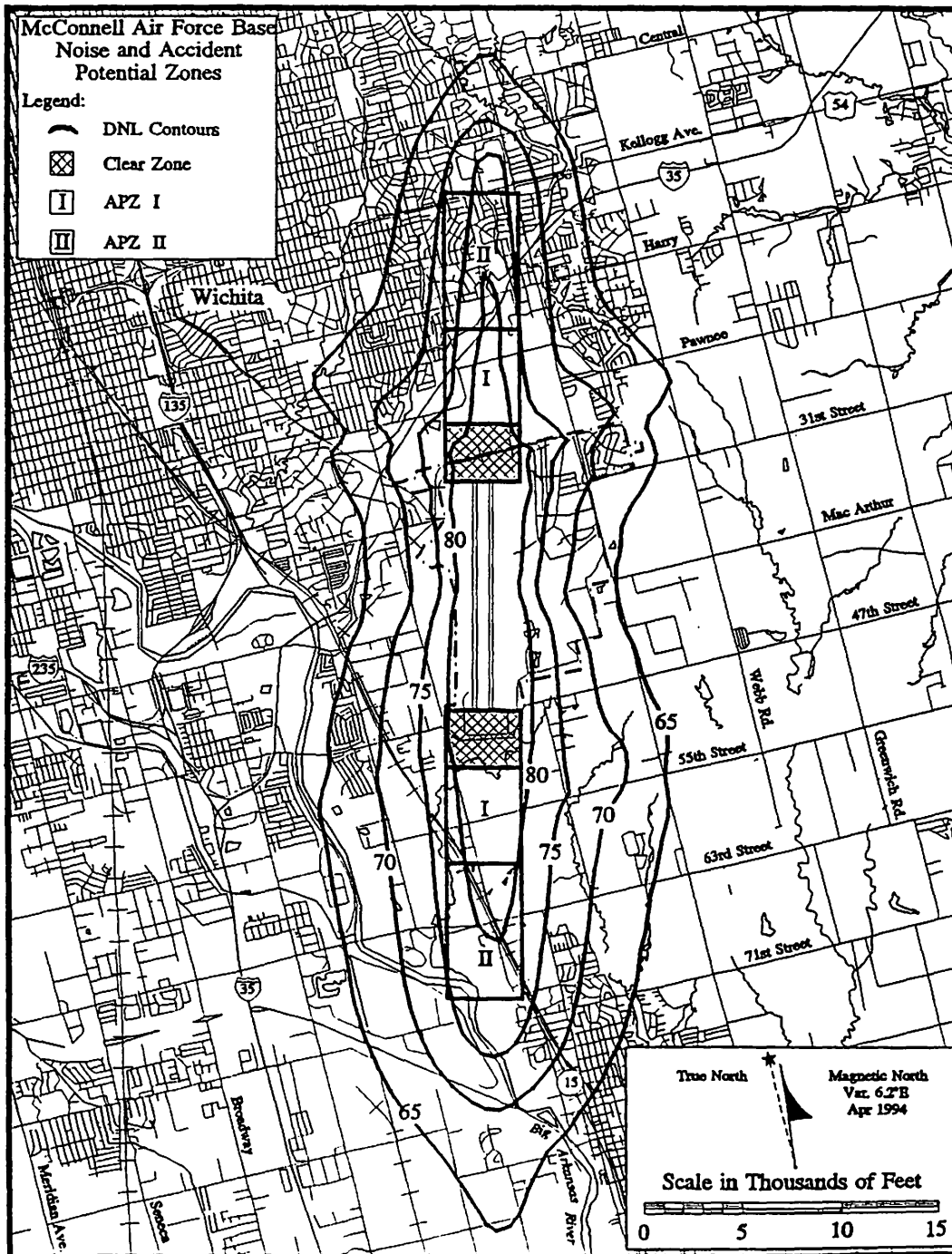
2. The report outlines the location of runway clear zones, aircraft accident potential zones, and noise contours, and recommends compatible land uses for areas in the vicinity of the base. It is our hope that this information will be incorporated into your community plans, zoning ordinances, subdivisions regulations, building codes, and other related documents.

3. The basic objective of the AICUZ program is to achieve compatible uses of public and private lands in the vicinity of military airfields by controlling incompatible development through local actions. This update provides noise contours based upon the Day-Night Average A-Weighted Sound Level (DNL) metric used by the Air Force, and it provides the information necessary to maximize beneficial use of the land surrounding McConnell Air Force Base while minimizing the potential for degradation of the health and safety of the affected public.

4. We greatly value the positive relationship McConnell AFB has experienced with its neighbors over the years. As a partner in the process, we have attempted to minimize noise disturbances through such actions as confining most flight operations and ground engine run-ups to the hours between 0600 and 2200, utilizing sound suppression facilities for ground run-ups, and avoiding flights over noise-sensitive locations. We solicit your cooperation in implementing the recommendations and guidelines presented in this AICUZ report.

CHARLES H. COOLIDGE, JR.
Brigadier General, USAF
Commander

AICUZ MAP



**APPENDIX F
AIR QUALITY CONFORMITY DATA**

Estimated Amount Of Gasoline Consumed During Construction: 900

Gasoline (Gallons)	X	MM BTU/Gal	=	MM BTU
4,000	X	0.123361	=	493.44

Estimated Amount Of Diesel Consumed During Construction: 6,000

Diesel (Gallons)	X	MM BTU/Gal	=	MM BTU
58,188	X	0.13708	=	7,976.41

Internal Combustion Conversion and Emission Factors

POLLUTANT	GASOLINE	DIESEL
PM	0.1	0.0697
PM 10	0.096	0.0573
CO	0.627	0.81
NOx	1.63	3.1
SOx	0.084	0.404
Total VOCs	3.03	0.11
Acetaldehyde		0.0000252
Acrolein		0.00000788
Benzene		0.000776
Formaldehyde		0.0000789
Naphthalene		0.00013
Polycyclic Organics		0.000082
Toluene		0.000281
Xylene		0.000193

The above MM BTU and Internal Combustion Conversion and Emission Factors are use to make air emission calculations on the following tables.

Pounds Of Pollutants Generated By Construction Activity For Each Fuel
(Multiply MM BTU Of Each Fuel By Emission Factor)

Gasoline MM BTU 493.44
Diesel MM BTU 7,976.41

POLLUTANT	GASOLINE	DIESEL
PM	49.34	555.96
PM 10	47.37	457.05
CO	309.39	6,460.89
N0x	804.31	24,726.87
S0x	41.45	3222.47
Total VOCs	1,495.14	877.41
Acetaldehyde		0.20
Acrolein		0.06
Benzene		6.19
Formaldehyde		0.63
Naphthalene		1.04
Polycyclic Organics		0.65
Toluene		2.24
Xylene		1.54

TOTAL POUNDS AND TONS OF POLLUTANTS GENERATED BY CONSTRUCTION ACTIVITY

POLLUTANT	TOTAL POUNDS GASOLINE AND DIESEL POLLUTANT	TOTAL TONS
PM	605.30	0.3027
PM 10	504.42	0.2522
CO	6,770.28	3.3851
NOx	25,531.19	12.7656
SOx	3,263.92	1.6320
Total VOCs	2,372.54	1.1863
Acetaldehyde	0.20	0.0001
Acrolein	0.06	0.0000
Benzene	6.19	0.0031
Formaldehyde	0.63	0.0000
Naphthalene	1.04	0.0005
Polycyclic Organics	0.65	0.0003
Toluene	2.24	0.0011
Xylene	1.54	0.0008

COMPARISON TABLE

Comparison of air pollutants (measured in tons) expected to be generated by the "Preferred Action Alternative" compared to air pollutants currently generated by stationary sources at McConnell AFB (as reported in 2000 Air Emissions Inventory for McConnell's synthetic minor permit application.

POLLUTANT	GENERATED BY PROPOSED PROJECT	CURRENTLY GENERATED	PERCENTAGE COMPARISON
PM	0.3027	3.83	7.90
PM 10	0.2522	3.81	6.62
C0	3.3851	17.84	18.98
N0x	12.7656	26.53	48.12
S0x	1.6320	11.23	14.53
Total VOCs	1.1863	23.57	5.03
Total HAPs	0.0060	2.76	0.216

Note: Total HAPs category includes acetaldehyde, acrolein, benzene, formaldehyde, naphthalene, polycyclic organics, toluene, and xylene added together.

These calculations are for comparative purposes only. McConnell's synthetic minor permit application considers only those air pollutants generated by stationary sources. All pollutants generated by gasoline diesel internal combustion during the proposed project will be generated by mobile sources, and are therefore exempt from consideration.

APPENDIX G
PUBLIC REVIEW TRANSMITTAL SHEETS
NEWSPAPER ARTICLES
AND RESPONSES

*Environmental Assessment To
Construct Base Civil Engineering Complex
McConnell AFB, Kansas*